

Me and My Universe



S T Lakshminikumar

Me and My Universe

Me And My Universe

A Conversation

S T Lakshmikumar



नमो गुरुभ्यः

I am deeply indebted to
Everyone who helped me learn
Through
Teaching, Discussion and Argument

Gratefully remembering the extensive
conversations I have been having with

Dr S Mohan

for more than twenty years from which every
single idea contained herein has emerged

Why This Conversation?

I have made earlier attempts to disseminate my personal philosophy. First I had written monographs discussing science (The quest for new materials, Experimenting with the quantum world), strength of science (How well do we know it?), science and religion (On walking the knife edge of science and religion), Indian science (An unknown scientist in the ivory tower) and independent India (India : My India). Then I tried to draw attention to these through my blog, hitopadesam at WordPress and made copies of these books freely available there. I tried to illustrate my personal philosophy through selected pieces of internationally well known short fiction. This was an anthology "Me and my universe". I had posted the linking essays written by me in my blog. This conversation, another attempt to convey my philosophy has also been posted in hitopadesam. The text has been very slightly modified to clarify the expression and subdivided into more topics. Hopefully it will contribute to the continuing effort with the motto of *svaanta sukhaaya*, (for the benefit of the self) and *sarva hitaaya* (for the betterment of everyone)

Lakshmikumar

Topics analyzed in this continuous conversation

1	My Universe : My Rainbow	11
2	Knowledge : How Well Can We Share It?	14
3	Galileo : Beyond Galileo	17
4	Velocity Of Light Is Not The Only Limit	21
5	Science : Eternal And Ephemeral	25
6	Quicksand Of Quantification	29
7	Lies, Damn Lies And Statistics	32
8	Thinking It Isn't Making It : Let Alone Using It!	37
9	Affordable Irrationality	41
10	Science Exaggerated : Science Ignored : Science Rejected	45
11	Claiming Support From Science : Selectively!	50
12	Unviable Groupthink	54
13	The Gini Warns	57
14	The Gini In The Machine	62
15	Individually We Can : Collectively We Can't	66
16	Taking Microscopic Chances : Fearing Microscopic Dangers	70
17	Limits Of Collective Action	73

18	Limiting Over Reliance On The Individual	76
19	For Myself And Me Alone?	81
20	Duality In Societal Organization	86
21	Of Broken Windows And Breaking Laws	89
22	Fearing The Slippery Slope	94
23	Universal Safety Net Is Necessary : With Limits	98
24	What Am I? Who Am I?	103
25	Evolved Beyond Evolution	110
26	What Am I? Who Am I (Contd.)	116
27	While I Am Here, What Best Can I Do?	120
28	Indian Religion And Mythology (A Diversion)	126
29	While I Am Here, What Best Can I Do? (Contd.)	130
30	Reinterpreting Ancient Indian Ideas	137
31	The Irresolvable Duality	143
32	An Aesthetic Interlude	148
33	The Poet's Lament	151

My Universe : My Rainbow

What I wonder is this universe of which I feel I am a part!

Science says it is a collection of particles of matter and particles of light, interacting in ways that are now known to physicists.

Why should one trust whatever science says?

Because believing science is logical. One can convey science to others and the logic of scientific conclusions will be universally appreciated.

But before returning to that, a more important question! Can the experience of being a part of the universe be similarly conveyed.

No. One can convey scientific conclusions regarding objective reality not subjective experience.

Does this mean that my universe is different from that experienced by all the others?

In one sense, yes. In MY universe I am the subject, the one who experiences. Intellect tells me that all other human beings are also similar; that they must be having similar experiences. But I do

not and cannot know their experiences. The universe is made of atoms so am I. I know the universe is made of atoms. But does the universe at large know that I am? Not in any common sense meaning of the word "**know**".

Is this not a bit metaphysical?

Not really. After all, the rainbow I see on the horizon is different from the rainbow that anyone standing right next to me is seeing. Strange as it may sound, that is a scientific truth. The rainbow is formed due to diffraction of sunlight by millions of drops of water suspended in air. Even if two observers are close together, different sets of drops contribute to the respective rainbows.

While you can convey such subtle and interesting scientific information, you cannot convey the beauty of the rainbow of seven colors, can you?

Of course, that is true. One can only make more precise observations and inferences. In the present case for example, the colors in the rainbow merge into one another and despite the near universal acceptance that there are seven colors, dividing the rainbow into seven bands of different colors is purely subjective.

There is also a claim that a pot of gold will be found where the rainbow touches the ground.

That is however not easily amenable for verification. The rainbow is a virtual image like a reflection in a mirror. It does not actually touch the ground. So where should one dig for the pot of gold?

Of what use are these random thoughts?

Like the mythical pot of gold their utility is purely subjective. They will surely not provide specific practical steps backed by claims of being scientifically validated for self improvement. They will not also help identify a spiritual preceptor or guru. So their being for ***svaanta sukhaaya***, (for the benefit of the self) and ***sarva hitaaya*** (for the betterment of everyone) is purely subjective.

Knowledge : How Well Can We Share It?

As the wise sage asked, how do you know that what you call a dream is not actually reality? How do you know that what you call reality is not actually a dream?

The ancient Indian sages concluded that the only reality is the self and called everything else an illusion. This philosophical position was most probably based on the assumption that anything fundamentally real must be beyond change. So it is an illusion or *maya* to think that something ephemeral and changing was real. They explicitly accepted that sharing experience through words has shortcomings and ultimately only self experience was to be trusted. I was never totally convinced.

Why?

In my experience, dreams are illogical and more importantly disjointed. Reality is not. The universe is definitely not imaginary. There is definitely quite a lot common between the universe as experienced by different individuals, even if some are children and others psychotic patients. This is not true of dreams. These differences are

subjectively obvious. Unfortunately, many may not be convinced by this argument. Further, reports of neurological experiences ranging from amnesia to multiple personality disorders warn that even subjective experience is not so simple.

Many people are so illogical in what they say and what they say they believe. The logic of science fails to convince millions. Are they genuinely not convinced or just being stubborn? What is the reason for this real or apparent resistance to logical thinking?

The problem is fundamentally linked to human subjective desires and aspirations. There is a hierarchy within objective knowledge. Mathematical proofs are objective knowledge that would be impossible to disprove. But mathematical theorems can be and often are dismissed as irrelevant to human issues. Fundamental physics is a mathematical description of nature that has been experimentally verified to extremely high accuracy. Why nature is mathematical is however entirely unknown. The rest of the sciences, even when describing objective reality in mathematical language are disjointed. In an attempt to bolster passionate personal ideologies, the strength of the scientific evidence in its support is overstated. This more than anything else contributes

to not accepting and acknowledging shared objective knowledge.

Isn't there something between subjective experience and objective communication? After all, subjective experience cannot be shared. Objective scientific information can be shared but apparently not everyone is willing to accept objective evidence.

There indeed are some things that can be partly shared. Examples are literature, music, art, philosophy etc, These were properly called humanities in an earlier era. They communicate knowledge in an approximate way. Human language is far more suitable for conveying emotional and subjective experience of the universe obtained by human sense organs than science which is purely a product of human intellect. Unfortunately this comes at the price of reduced precision and universality, an essential limitation of human language. The technological marvels that have accrued due to advances in sciences has induced an unfortunate desire to share glory by claiming humanities are social sciences.

Galileo : Beyond Galileo

A set of instructions for building a boat is objective information that can be shared. So is a theorem of geometry. For ages, all human societies used logic in philosophical discussions. Then one has fundamental physics. What distinguishes all these items of objective knowledge?

The training required to understand and convince oneself of the essential truth, falsity or irrelevance of any of the above is vastly different. Building a boat needs patience and hand eye coordination. Appreciating a mathematical theorem or fundamental physics requires extensive training. Individuals may not have the ability or inclination for one or the other. Consequently, for many, acceptance of objective knowledge becomes deferring to authority.

But then, how to distinguish between a philosophical argument, a religious discourse and a scientific claim?

Even if an individual cannot acquire the skills to build a boat, it is easy to verify if the boat built according to a given plan sails or sinks. Experimental verification is the only mechanism available to evaluate objective knowledge.

But how can this be valid for a theorem in geometry? Logic and mathematics are beyond experimental verification. Further, experimentation is even more difficult than learning complex logic. How to detect if an observation is merely a trick by a magician? How to disprove the many claims of confirming astrological predictions?

Ever since Galileo, experimental verification has emerged as an acid test for scientific validity. Not that experimental verification was not employed before. But logical discussion was given more respect. Experimental method enabled great progress of science and in particular of physics in the last three hundred years. It ultimately led to the greatest single piece of human knowledge, namely, nature is mathematical.

What exactly does it mean to say that nature is mathematical and how exactly does that address the practical difficulties of experimental verification?

It means different phenomena are observed in nature but the experimental observations are described by the same mathematics. The earliest example is Newton describing both the movement of planets and cannon balls by a common set of equations. The same equation is

verified by every high school student experimenting with a simple pendulum. Obviously, a single claim of an experiment giving results contradicting all this is not significant. Any such claim would need to explain not only the new result using a novel mathematics but simultaneously explain all the millions of earlier experiments. It is thus perfectly reasonable to dismiss any claim of human levitation as either a magician's trick or a hoax.

Doesn't this look like deification of physics? Does everything in science fit into this framework of nature being mathematical? The claims in support of science as opposed to religion stress falsifiability as a test available only for science. Does not this argument of nature being mathematical dismiss falsifiability itself?

To acknowledge the superiority of mathematical, fundamental physics is not deification. That said, it is absolutely true that only fundamental physics reveals this mathematical nature. Reality is quite complex. Many scientific observations are statistical conclusions. Defining falsifiability using ordinary language results in irresolvable discussions no different from other philosophical conundrums. Modern scientific endeavor based on experimental method has

revealed complexity far beyond the simple idea of falsifiability attributed to Galileo but this is not acknowledged in the society for a variety of reasons.

Velocity Of Light Is Not The Only Limit

Gravity and quantum mechanics are mutually contradictory. So why reject any other claim just because it contradicts existing fundamental physics?

There are two mathematical descriptions of nature in fundamental physics. One describes gravity and movement of bodies of everyday experience, from marbles and cannon balls to planets. The second explains interactions between extremely small particles of matter and light causing everything from colors of soap bubbles to radioactivity. Despite efforts for over a century, they are not unified. Both however have certain common features. Material objects or information cannot move faster than light. Energy can neither be created nor destroyed. Momentum (product of mass and velocity) is conserved. Most outlandish claims violate one or more of these basic norms. These are thus summarily rejected and justifiably so.

Surely this cannot be the total picture. Quantum mechanics is counter intuitive. Gravity is not. Have not many established scientists claimed that a conscious observer is intimately related to

the quantum process? Many even claim that consciousness is a quantum phenomenon.

There are perhaps more distinguished scientists who see no links between consciousness and quantum physics. Quantum phenomena violate common sense when described in words. For example, in one very famous experiment, one electron at a time falls on a screen. It forms a spot that can be seen and recorded. There is a thin wire between the source and screen. The electron can pass on either side of the wire. As number of electrons increases, the spots form a wave like pattern. The pattern is understandable if the electrons were waves and the spot if it were a particle. How can the succeeding electrons “know” where to arrive to form the observed pattern? The standard answer is that only the probability of its arrival at a point can be known. This is not satisfactory to many and is the cause of all these conjectures.

May not an as yet undiscovered inner structure to the electron solve the dilemma?

Experiments confirm that theories (called hidden variable theories by physicists) which introduce inner structure would not remove the counter intuitiveness and still agree with experiments.

Electron forming a spot on the screen does not apparently involve consciousness. May be the need for conscious observer is more apparent in some other experiments?

Experiment after experiment fails to reveal any link. Quantum physics explains the electric and magnetic fields as exchange of virtual photons. These are created and absorbed without there being any conscious observer. They are nonetheless real! **Casimir** force, caused by the presence of these virtual particles has been experimentally measured.

How about the claim that consciousness itself is a quantum phenomenon?

Everything in nature not involving gravity is caused by quantum particles and so is every process that occurs in the brain. Claims of consciousness existing without a brain are only the thought processes in the brain of another conscious being, as are claims of consciousness being a quantum phenomenon. The only objective statement regarding consciousness is that it is a subjective experience.

What is the sense in claiming that quantum physics is incredibly accurate when it provides only a probabilistic picture of reality?

Well! In some cases the agreement between theoretical calculation and experimental result is better than one part in ten billion. It is equivalent to determining the diameter of a sphere of the size of the earth with an error equal to the thickness of a human hair.

Science : Eternal And Ephemeral

How is the experimental verification of quantum theory to an accuracy of a part per billion in one experiment relevant to matters of human importance?

Clearly not every experiment verifies fundamental physics to that accuracy. Quantum physics, the fundamental theory can directly calculate only a few experimental parameters. It however justifies a philosophical conclusion that quantum physics is “**eternal science**” and a glory of human intellectual accomplishment.

But how does it relate to matters of everyday experience other than rejection of outlandish claims?

Despite the limitations, quantum theory indirectly guides almost every human technology. Consider semiconductor technology. The concept of a semiconductor is impossible without quantum mechanics. When an engineer designs a semiconductor device, quasi-classical rules which describe the movement of an electron with an “*effective mass*” in an electric field are used. These are approximations. But that is the only way useful designs can be created. The recipe for fabrication uses empirical

rules for example to decide how long a chip of silicon has to be heated and in what atmosphere. Finally a few chips are tested after fabrication, subjecting them to severe environmental conditions. Statistics of failure decide if the technology is commercially viable. The rules for design, recipes for fabrication and environmental testing are guided by fundamental physics but not all details can be quantitatively determined from theory let alone with high accuracy.

Does this hierarchy apply in all cases of scientific knowledge?

Any successful technology would follow the same hierarchy. But this does not determine commercial failure. All aircraft manufacturers will design planes using engineering principles solidly based on science. Still, only some manufacturers will succeed and others will fail. Disregarding the constraints of fundamental physics however will inevitably lead to failure. Unfortunately, all social sciences rely on statistical results unrelated to fundamental science. Therein lies the major limitation of the modern habit of justifying societal decisions with social sciences.

But even fundamental physics has a number of limitations. Uncertainty and indeterminacy of

quantum physics add onto the speed of light, conservation of energy and other limitations mentioned earlier. So why give a special privilege to physics?

Well the beauty about scientific knowledge is not that there are no limitations, merely that the limitations are precisely known. Even the seemingly most perfect of subjects, arithmetic has its own limitations. Quantification and logic are not some kind of universal tools that can be used without thought.

So, there is a distinction between social sciences and fundamental physics though both rely on logic, quantification and the experimental method?

Social science does not directly contradict the limitations imposed by fundamental physics. Fundamental physics is strengthened by the mysterious reality that the nature it attempts to describe is itself mathematical. Social sciences have no such advantage. Thus, elaborate mathematics is employed without confirming that the reality can be so approximated. It is fairly easy to recognize fundamental limitations but such concerns are simply ignored since this would totally undermine the effort to quantify and create an aura of appearing scientific. Also

statistical analysis is employed ignoring fundamental limitations of that approach. It is quite justified to call science totally based on statistical correlation ***ephemeral science***.

Quicksand Of Quantification

A very famous scientist said “express it in numbers, you know something about it, when you cannot express it in numbers, your knowledge is of a meager and unsatisfactory kind”. Why is this not true of social sciences?

This is a classic example of what mathematicians call a necessary but not sufficient condition. Quantification is necessary but not sufficient. As a humorous example consider an astrologer who uses mathematics very extensively and a palmist who doesn't. One seeks to predict future from the position of planets, while the other uses the lines in a palm. Mathematics does not confer superiority on astrology.

That is not a valid comparison. Astrology, palmistry or for that matter any other system claiming to predict the future is not based on inferences drawn from systematic observations. Social science seeks to do so. So where exactly is the weakness of quantification in this context.

As conceded above, it was a humorous example. A correct example would be the confirmation that economic activity is fundamentally chaotic and hence unpredictable. But extensive mathe-

mathematical modelling is highlighted as evidence of predictability of economic theory.

How can one prove that something is unpredictable. It looks like a contradiction or a conundrum.

This is called deterministic chaos. It may be counterintuitive but is based on simple repetitive mathematics. A new number is generated by a series of simple arithmetic operations and this cycle is repeated creating a series of numbers. The smallest change in the first number will create a completely new significantly different series. Thus, even though the mathematics at each step is deterministic, the overall series is not. One is familiar with the necessity to round off numbers even in simple calculations such as writing $\frac{2}{3}$ as 0.67. One may as well use 0.667. Such small changes create unpredictable consequences in some situations and hence chaos.

Is the observation of chaos confined to economics? Is it not also a part of physics?

Chaos became part of mainstream science following the efforts to create models for weather. It is summed up beautifully by the statement, "The exact time of formation and the path taken by a tornado could be influenced by

the flapping of the wings of a distant butterfly several weeks earlier". Several examples of chaotic behavior in other physical systems have been predicted and observed. Some are extremely simple, like coupled pendulums.

So why is it not a major limitation in physics?

One goes back to the earlier discussion of nature being mathematical. The concept of a momentum, the product of mass and change in position appears usable for the sun as well as a virtual photon that no one has actually observed. This enables the limitations of chaotic, unpredictable behaviour to be identified easily. In physical systems due to conservative laws, chaos is extremely rare. The concepts in social sciences don't have this strength.

But surely not all social science is unpredictable and chaotic?

True. But most of it is statistical analysis which has its own severe limitations particularly in the absence guidelines of a fundamental theory.

Lies, Damn Lies And Statistics

Why is statistics so abused?

The scientists are to blame. They are only human. So they overemphasize the strength of their effort. The public is initially bamboozled by the “experts”. When the conclusions are based on statistical analysis alone, as is the case with social sciences, the denouement is quite quick.

Is it possible to understand the limitations of statistical evidence without becoming an expert?

A few rules of thumb come in very handy. First, events with moderately low probability are quite easy to observe. In contrast, a violation of the basic laws of physics is extremely improbable and any report of violation can be rejected.

What constitutes moderately low probability?

Consider a set of dice used in board games. The six sides are numbered from one to six. Consider a specially made one where two sides have the numeral one and the other four sides have numeral two. Obviously it is a loaded dice and “two” is twice as probable as “one”. But over a short run, a series of “one”s is quite easy to observe.

But this is ridiculously easy for scientists to guard against.

Absolutely true. Relying on an isolated random success is actually the hallmark of pseudo-science. That is true of astrology and alternative medicine. Nevertheless, this is an important hidden limitation of many mainstream social science claims.

How come?

People are not interested in the objective truth of the scientific claim but in the subjective utility in their lives. So the key question is what are the odds that the scientifically validated advice will be useful for a given individual or society. Are the odds reasonable is the question.

But this should be part of the scientific advice. A doctor while prescribing a medicine has a good estimate of how likely is the cure.

Absolutely correct example. In many cases the doctor does. With extremely serious diseases like cancer however, only the potential increase in median life expectancy with treatment is known. The probability of a person benefiting with treatment or surviving longer without it may not be even available.

But it is logical to expect that treatment will prolong life. How can it not?

The period of survival of patients with and without treatment are distributions. They can and quite often do overlap. It is after all self-evident that the males are taller than the females on an average but that does not make probability of a woman being taller zero.

This is mainstream medicine, integrated with biology, chemistry and ultimately physics. Benefit of treatment would be significant.

In social sciences this advantage is lost. Better investigative techniques enable us to objectively determine small differences between the averages. But the distributions overlap significantly and the probability of usefulness is extremely modest. Consider a politically sensitive example. The differences in IQ between different races or communities is a useless guide for societal action even if the difference between mean or median values is statistically significant. The difference is so small and the IQ distributions are so broad that there is very significant overlap.

In case of heights of human beings or the IQ of different races, one expects extreme cases are

few. But in other studies the distributions can even be lopsided.

Absolutely! In the inanimate world of engineering, the distributions are usually Gaussian. The average value is equal to the median (half data are lower) and the mode (the most common). In real world human issues such mathematical simplicity is very rare. Often the distributions are unknown and sometimes unknowable. Understanding the probable risk of rejecting “scientific advice” questions the aura of expertise in social sciences.

Looks like the comment about statistics is not too far off the mark!.

Actually there is another major limitation of statistical analysis, one which effects to an extent even physics. That is called the base line fallacy. This is well known but once again brushed under the rug since it would invalidate quite a lot of research approaches. If an event is extremely rare, large scale testing results in a large number of false positives. The test itself may be very accurate but the effective accuracy is far lower. This for example is true of earthquake prediction. Similarly, a fear of an epidemic induces large number of healthy people to get themselves tested. Many would report false

positives. Ultimately, in a large number of societal issues, common sense is as good and occasionally better than expert advice.

Thinking It Isn't Making It : Let Alone Using It!

To prefer common sense over the intellectual effort of innumerable honest social scientists appears strange. Is it not like supporting flat earth?

Rejecting psychology or economic theory as a useful guide for individual and societal use is not similar to championing flat earth. The limitations of social sciences are best illustrated by a thought experiment discussed by the famous mathematician and physicist Henry Poincaré. If a Greek philosopher, say Socrates were brought to a modern university he cannot understand a word of physics but would be quite comfortable arguing aesthetics.

You are claiming that there has been nothing new in aesthetics in two thousand years?

Yes and no. There have been new ways of analyzing and understanding. But only a committed partisan would say one view is superior to another.

And this applies to economics or psychology? Sounds very much like Alexander bemoaning that there were no worlds left to conquer. There

were other nations he did not defeat. Only he wasn't aware!

There have been areas in hard sciences that have not changed in a long time too! It is hundred years since general relativity was proposed and a quantum theory of gravity is nowhere in sight! But there are no experimental results that require a grand unified theory. So even if one were developed, its impact on science would be marginal. The claim here is that the intellectual effort of social scientists, has a minute societal utility because of the weakness of the statistical conclusions as discussed earlier.

Obviously social scientists would not agree!

Onething they would have to concede. As one moves from mathematics and hard sciences to pure visual art, the possibility of an amateur making significant creative contribution increases. This in itself shows that the relevance of the intellectual analysis of the various disciplines decreases.

Looks like the the relevance of theology for religion.

That is a wonderful example. Theology is as important for religious practice as economic

theory is for economic activity in the real world. The theologian is modest, conceding the limited utility of his intellectual reasoning and logic. He accepts the importance of saints and savants who do not care for his theology. The economist is far more unlikely to be equally modest. He is contemptuous of those who think independent of his intellectual rigour. Ultimately, unlike the theologian he sees no higher authority and ultimate goal. So he rejects evidence that economic success does not need his theory and more importantly that following economic theory does not result in economic success.

It is nobody's case that social sciences are perfect or even that they are as good as the hard sciences but aren't they better than nothing?

The present extensive discussion of the limitations of social science is necessary for understanding, appreciating and hopefully accepting the philosophical arguments that follow. This is backed by the conviction that when scientists exaggerate the potential utility of their science they are exposed as liars and lose the moral power to criticize other unscientific claims. Almost universally, the basis of social science is to calculate averages and compare them. The weak conclusions are translated into ordinary language as commandments. They

consequently fare as bad as religious commandments. The emphasis here is on empiricism based on commonsense. The lesson from successful technology is very relevant. An engineer understands that not every piece of fundamental science can result in a workable engineering model. Not all models can be converted into a mass produced product. Finally, a well engineered product may not be commercially successful.

Is not exaggerating the potential utility an issue in hard sciences?

Absolutely. This is usually an attempt to get funding for research. But it does create problems for society at large when these become the basis for societal action. This is most common in mainstream medicine. Not so much an issue in physics or chemistry which are not directly usable.

Affordable Irrationality

Very large number of people reject science totally. Many believe in astrology. Many think the earth is merely a few thousand years old. Quite a few deny that the climate of the earth is changed by human activity. Why are so many people rejecting rationality?

Those holding these views are not merely rejecting rationality. They are rejecting the strongest of sciences namely physics. The only possible force between the planets and a human being is the force of gravity. But the force of gravity between the obstetrician and child is far larger than that between Jupiter and the child! So much for planetary positions at birth influencing life. The other three fundamental forces of nature are unobservable at these distances. The best argument against the *young earth* is the identification of sun as a second generation star having atoms produced by earlier stellar explosions. Analysis of ice cores confirms that carbon dioxide levels in the atmosphere are much higher now than at any time in the past million years. Very low concentrations inevitably lead to low temperatures and the advent of ice ages. High concentrations correspond to warm earth.

That makes the irrationality even more striking than rejecting some weak social science conclusions. So why do so many people accept the irrational?

Astrology is definitely irrational but the reason for embracing it could be different for different people. For some it is merely a nice topic for casual conversation or the pleasure of irritating rationalists. For some others it is a daily dose, far safer than a cigarette or alcohol. There would be some people “wasting” money and effort. But then many bankrupt themselves on luxurious spending despite not believing in astrology. There will undoubtedly be some whose lives have been ruined by astrology! But are they more numerous than those ruined by drinking or gambling? Most “arranged” marriages in India are preceded by “matching horoscopes”. Are failed marriages less common among “love marriages” and couples opting for pre marriage cohabitation? In what sense other than intellectual snobbery is one to look down on those believing in this “irrationality” which is quite affordable for many?

What about people employing the advice of astrologers rather than expertise of doctors to treat their medical condition?

That is admittedly a problem. People are safe as long as they confine homeopathic treatment to colds and coughs. It would be disastrous if they do that in the case of a heart attack. But most people are clever that way. They switch to standard medicine as soon as they have some serious ailment. They continue to praise homeopathy and disparage mainstream medicine however! Same with astrology. People are quite selective in accepting the astrologer's words.

What about the young earth and creationist science?

This is an irrationality that is even more affordable! There is no practical utility of accepting the theory of evolution. Creationism is no doubt a confused rambling to enable those Christians insisting that the Bible is literally true from admitting that science contradicts their Holy Book. Many probably accept the intellectual concession as a small price for being a part of the congregation and enjoying the social and emotional benefits. Some may even prefer to lie rather than openly admit the mistake of people with whom they have emotional bonds. Ultimately there is very little cost of being irrational about this.

By this reckoning, conspiracy theories that hold moon landing is a hoax or that the earth is flat which are very common on social media have no negative costs at all.

Absolutely true. The participants even get a feeling of fellowship and participation. In today's world, extensive training is required for participation in rational endeavors. Most people are left with only the skills to spread and possibly peddle irrationality!

Is it possible that much of the claimed commitment to irrationality is only showbiz?

The statistics of people admitting to irrational beliefs cannot identify liars! There is no reason to assume that liars are a small fraction. The difficulty of educating them indirectly reveals that most are perhaps deliberately adamant rather than ignorant. Lack of an intellectually cohesive response to an unacceptable or difficult lifestyle could also be a major reason for taking refuge in irrationality, particularly in the case of climate change denial as well as creationism.

Science Exaggerated : Science Ignored : Science Rejected

If exaggerating the utility of science is such a big issue why has it not been noticed by anyone before?

Richard Feynman, one of the greatest scientists of all time did; when he investigated the Challenger disaster. He pointed out that the bigwigs of NASA went on making exaggerated claims about the utility of the space shuttle and ignored basic scientific reality. He correctly noted that consequently those lower down in the hierarchy stopped communicating the serious issues and eventually perhaps stopped bothering. He summed it all up nicely; “reality has to take precedence over public relations”. Unfortunately this is ignored very often.

But this was perhaps an unusual case. NASA desperately needed funds once the moon mission was completed.

Scientists exaggerating the utility of their work is very common. They are competing among themselves for limited resources. The financial authorities are more impressed by claims of utility which they understand rather than quality

of science which they do not. Exaggeration can even land scientists in prison.

This is a ridiculous claim!

Not really. The baseline fallacy limits human ability to predict earthquakes. Some Italian scientists were not too careful with their words and were hauled into court for death and destruction caused by an earthquake. But the real problem is different. Scientific claims come with their own fine print like commercial contracts or legal documents.

That is very funny on the face of it.

It is the reality. When a scientist says his method "may be" useful for this or that, what he really means is that the claim is not contradicting any fundamental postulates of physics. The odds of success are likely to be extremely minuscule but never revealed. There will be a demand for support from society to support further investigations though.

Does this really matter?

It sure does. For example, it is partly responsible for the ever increasing support for a variety of alternate medicine systems. There are eternal calls that they be also investigated just like the

millions of "scientific claims" which are not showing any results.

But alternative medicine systems are unscientific. They are impossible according to fundamental science.

People only see millions of claims by scientists, most of which fail. So why give so much weight to science? In any case, scientists themselves often skate on thin ice. Earthquake prediction continues to be investigated and that is not the only example. Nanocatalysis is another. Laws of conservation of energy or thermodynamics are not explicitly rejected and the professional publications are carefully drafted to hide the unviability of the claims that further research "may result in useful technology". The press releases and social media posts are less restrained and create an environment for continued belief that free energy schemes are being suppressed by big oil companies just as big pharma is conspiring against alternative medicine. Every chemical is toxic at high enough concentrations. Scientists themselves, (not quacks) exaggerate the relevance of their studies to human health and well being. Many claims in social sciences are openly Lamarckian. Once again, this is masked by scientific jargon in professional publications but not elsewhere.

So this exaggerating or even ignoring science by scientists themselves is creating an environment where the general public is rejecting science?

It is certainly an important component. One thing is obvious in modern society. A range of disciplines have acquired the halo of being scientific. University departments are created, degrees awarded, individuals are trained. But the utility is never scientifically evaluated nor fundamental weakness acknowledged. Consider all the developments claimed for modern teaching practices. *Rod and lines* (beating and writing exercises) has been replaced by praise and encouragement. Some students were adversely affected by the rigid discipline of the past. Quite a few fail due to demonization of discipline now. Has there been an improvement? Penology devises methods for humane treatment of criminals and has the same issues.

This is extreme pessimism. In a closed dictatorial society, nonsense can be forcibly enforced very much like Lysenkoism in the erstwhile Soviet Union. In a democratic, open society, astrology for example cannot get societal approval.

Unfortunately, all the arguments of the medical experts have not prevented governments

offering homeopathic treatment as part of the national health care. *Concorde Fallacy* is a well established phenomenon. Too many people have invested too much time and effort to renounce these experts. Science is always about predicting the outcome. When one is certain that there will be no bright future because of fundamental problems that are being swept under the carpet , this has to be openly expressed. The pessimism is warranted. There are too many wearing rose colored glasses, fooling themselves along with others. The only hope is for commonsense to slowly reassert itself in a significant number of individuals. Unfortunately, in contemporary democracies group identities are extremely strong and selectivity use weak or nonexistent science in support.

Claiming Support From Science : Selectively!

The modern liberal or socialist individual invokes the support of science while advocating societal policies in a democratic set up. However weak the science, aren't they better than societal policies advocated from religious convictions?

There is no doubt that humanistic societal policies have always been resisted by religious people. This was true of Hindus opposing the legislation banning child marriage a hundred years ago. Muslims challenge the minimal legal challenge to *triple talaq* (instant divorce) in contemporary India. Equivalent situations existed in nineteenth century European societies. At the same time, successful societal change was mostly accomplished by religious individuals. Martin Luther, Swami Vivekananda, Mahatma Gandhi and Martin Luther King Jr. are examples that come to mind.

But they did not seek support of science either. There was no need for science to realize that slavery or untouchability were inhuman practices. But pseudosciences like eugenics were invoked to justify treating blacks as second rate citizens! And the same groups are at the forefront of

denying climate change. This is not even weak science. It is unscientific nonsense.

Climate change is a great example but for a different reason. Carbon dioxide emissions from humans have unquestionably led to concentrations far higher than were ever recorded on earth. Low concentrations of carbon dioxide are unquestionably linked to advancing ice ages in the past. But the idea that this complex relationship can even be modelled is absurd. These complex models are exactly as unreliable as models in economics. Predicting the utility of the various government programs to actually mitigate the consequences of extremely high carbon dioxide concentrations is patently impossible.

So?

The science is exaggerated for implementing social policies which have already been chosen. Unquestionably on surface, climate change deniers are more irrational and refusing to accept the reality. But no one is really rational. Those who champion policies to mitigate climate change are giving weightage to weak models that try to forecast climatic and economic consequences of the policies. For example they argue that a carbon tax would work on a principle

of supply and demand. The same people do not accept the same principle of supply and demand or other free market economic approaches for correcting economic disparities and other societal issues. Similarly, behind the irrational denial of human contribution to climate change are a fear of economic redistributive policies in addition to a free market economic ideology.

So both groups use science to support only when the conclusion is acceptable to them! Science may be objective. Accepting science is apparently not!

Exactly. From economics to sociology, from psychology to penology, approval precedes scientific arguments. Does group thinking cause individual criminality? It all depends. For some people, terrorism by Muslim individuals is causally related to the views of the Muslim *ummah* (community). For others the bombing of abortion clinics in USA is caused by religious fanaticism. Both will seek to bolster their choice with sociological studies, psychological evaluation and population surveys. Neither would concede that causal relationships are absurd when the only proof is statistical.

Yes. Blaming and banning the Bible is a bad idea despite some of the controversial content and

the actions of some followers. Not everyone who has followed it has turned out to be an opponent of humanism. Both the saint and the sinner were often inspired by the same text. Individuals will not necessarily become more humane by simply renouncing religion.

Groups are never to be judged or praised. Only individuals. The very idea of an average of a group in these complex issues is both meaningless and quite often counterproductive. Not merely selective acceptance of science but most human problems are rooted in this self identification with one group. There is an innate desire to join others and form groups as a support for survival. The ancients used theology to browbeat the people, modern groups try to use quasi science.

Unviable Groupthink

Marxism perhaps appeals to many not because of the intellectual argument but because it demands submerging the individual identity into the collective, which resonates with a very deep emotional desire. Western individualism in contrast is not so attractive.

Surprisingly, groups in modern societies are intellectually created. The scientific basis for these is virtually non-existent. The **Dravidian** or **Dalit** identities in contemporary India are based on a false reading of history. Black or White identities in USA are also a recent phenomenon. The Irish, Italian and German identities which were strong a hundred years ago have been submerged into a common "**White**" identity. The right co-opted the devout against the Godless reds quite some years ago. The religious were a useful addition in the number game of democracy. It was useful to limit socialist economic policies. The left in recent years co-opted *caste identities* in India. Minority racial groups, people with alternative sexual orientation and above all else those with a guilt consciousness about the actions of their ancestors are the liberals in contemporary USA. Unfortunately, you acquire followers but you lose convictions.

Economics and ideologies take the backseat while identities rule.

That may be an extreme claim!

Not really. While the death penalty is not demanded, blasphemy, defined as going against the majority of your identity is an unforgivable crime for modern identity warriors. Humane punishments and liberal parole which are claimed to reform the criminal are not recommended for "the others". In that case punishments have to be severe as a warning to others, like public hanging and torture in an earlier era. Thus, punishment for a polite refusal to bake a cake to a homosexual is economic ruin. Even the basic code of holding anyone "*innocent unless proven guilty beyond reasonable doubt*" can be dispensed with for a male accused of date rape without evidence. Science can be tortured to create more numbers. The LGBT groups demand restrictions on parental guidance so that potentially their numbers would not get reduced. Microaggression, political correctness, etc, invoke weak or non existent science. They are little different from, creationist science, cow vigilantism, anti Muslim bigotry etc on the right. Identity politics are diversions away from the basic economic ideologies on both sides.

So the problem is fundamentally “thinking in terms of a group rather than an individual”?

It forces one to shield or excuse stupidity in one's own group usually by pointing fingers at the rogues on the other side. A pathetic excuse of two wrongs making it right. Extreme individualism is not a practical answer. At the end of the day most human beings are for the most part miserable in isolation. A balance between individual and group is missing in contemporary world. Partly this is due to ignoring the role of rapidly changing technology in this context.

The Gini Warns!

Is that a "Genie" warns? About what?

The gini is a number that is a very good representation of the variability in a distribution and in particular inequality. For example in an imaginary society which is perfectly equitable and egalitarian, the gini coefficient would be zero. In a totally unequal society where one single individual owns all the wealth and the rest have nothing, the coefficient is 1. This number is often used for comparing societies or nations. Those having low gini earn bouquets and those with high value get brickbats. Sometimes the impact of various redistributive policies of the government in reducing gini are also discussed.

It appears to be an extremely simplistic characterization! Why is it so important?

The gini can be a useful qualitative tool in several novel ways. For example football players would be represented a high gini number since a few of them earn astronomical amounts while a vast majority have to be satisfied with a miniscule amount. Teachers in contrast would be much more egalitarian with a low gini. Even the most

famous instructor for a prestigious competitive examination makes much less than even a moderately successful professional football player. At the other extreme, most teachers would earn a living wage from teaching, a vast majority of football players cannot survive on earnings from the game and need other jobs.

But that conclusion can be drawn without actually calculating the gini coefficient.

The goal of analysis in societal issues is not to come to unambiguous conclusions. It is to appreciate the limited strength of our most cherished plans and programs for improving the society. The gini is an extremely useful concept in that context for many more societal issues. At the same time, precisely determining the gini coefficient for each issue would be another example of overuse of quantification which is an important issue in this discussion.

So why introduce another mathematical concept?

Almost no one is satisfied with the state of the society. Everyone identifies some problems of the society as most deserving of immediate societal action. The gini concept is a warning that these identifications are not even

approximately valid. The same would obviously be true of endless discussions of the efficacy of the various societal actions in resolving the problems even partially.

What exactly is the issue? While the limitations of social sciences have been highlighted earlier, a new scientific terminology must at least be capable of identifying problems. Why gini when simple logic would suffice?

Simple logic and common sense enable identifying problems in the society. Today, stoic acceptance of abusive husbands or poverty as divine providence is not tolerated. Though gini is only a concept and not a quantitative description it enables one to recognize that in all such cases, extreme examples influence the calls for societal action. Married people vary from those extremely satisfied with their partners to those in extremely violent relationships. Calls for changes in laws of divorce and property rights are justified by drawing attention to the extreme cases. Then there are situations in which the failures pay for the successful. Credit card users are a very good example. Those who can afford to pay the bills on time are obviously the financially better off. They get the benefit of interest free loans till the due date. Those who are poor and fail to pay are

charged exorbitant rates of interest. Similarly, the time and money spent on college education is an additional burden for the failures. The gini description is a warning that married couples, credit card users and students availing college loans are extremely diverse groups. The rich are obviously becoming richer but would not societal policies borne out of empathy for the extremely disadvantaged have hidden costs?

This appears to bring back the stoic acceptance of the situation not as divine providence but as a regretful reality of the inevitable failure of socialist policies.

The socialist in his empathy for the really downtrodden and his disgust for the really rich ends up with policies that only harm the marginally better off. Reservations adversely affect neither the intellectually superior nor those who can afford to partly compensate for intellectual limitations through resources. Extremely large fraction of jobs or seats can be reserved as in the state of Tamil Nadu. But then the competition becomes extremely tough. Those who get selected in the most competitive examination of the world, the IIT entrance, are learning items, a large portion of what they need not learn other than for the entrance examination.

So reservations are responsible for the parents becoming obsessive of academic success of their children?

Undoubtedly it creates the motivation for it. But in the context of the current discussion, reservations do not actually serve the goal of levelling the field. Reservations adversely affect not the most intelligent nor those with resources for training. They are a problem for the marginally capable who become bitter because they can neither compete nor avail of reserved benefits. Globalization does not trouble those who can compete for the highly rewarding jobs. It once again impacts the marginally capable. As does taxation. Taxing the really rich pays little. There are so few of those. To get reasonably significant tax revenue it is necessary to tax the larger number of moderately rich. Similarly easy divorce adversely affects marginal relationships. It discourages working to improve a relationship. It encourages breaking the existing relationship with a forlorn hope of being lucky the next time.

The Gini In The Machine

Granted that gini may be warning against daydreaming about societal transformation, and the limited chance of success for liberal societal engineering what does gini in a machine mean?

Technology enables fragmentation of society. The influence of technology on the gini or essentially the inequalities in society are never acknowledged. That is the gini in the machine.

Technology is an enormous help to the handicapped. A deaf person using a hearing aid or an individual moving independently on a mechanized wheelchair after an amputation are obvious examples!

But consider at the other end an individual with an extremely strong memory. The easy availability of enormous quantities of information through information technology would increase his advantages. He is not limited by the poor library in his neighborhood. The same technology that enables the mobility of a handicapped person empowers an individual to be mobile and independent of other human actors. Once again it helps most those who are

psychologically capable of doing so, not the weaker individuals. The role of robotics or other advanced technology is to enable those who are already better off thereby increasing inequalities. *So technology would be a hindrance to societal efforts towards an egalitarian society?*

Not necessarily. Technology is always neutral with respect to values. But technology enables you to avoid people and still live happily. The world is large enough to live apart. It is a kind of technologically advanced apartheid. Technology also enables easy identification of people with similar mental attitudes to foster this apartheid living. High technological skills of the people in this closed community prevent that from becoming a ghetto.

Unfortunately this could minimize empathy which largely depends on human contact. There will be no guilty feelings for participating in this technological apartheid either.

Absolutely true. The hyperconnected world created by technology has empowered those who are confident to be politically incorrect. That is the victory of Trump in the 2016 elections in USA. Over emphasizing scientific basis of political correctness has resulted in both science

and political correctness becoming totally unfashionable.

*Technology has the last laugh. Rather than one big boss as predicted by Orwell in his novel, **1984** we have everyone becoming a boss of a micro domain. Rather than the regime retrospectively correcting a common encyclopedia we have individuals editing and maintaining their own encyclopedias.*

That is part of technological empowerment of an individual. Technological empowerment is the real barrier to reducing gini and creating an egalitarian society. It is common to think of leveraging technology for common good. It is also common to invoke technological armageddon and roads to serfdom because of individuals becoming addicted to government support and surrendering their freedoms. No one really recognizes the interplay between the gini and the machine! On one hand technological progress reduces the cost of all goods and services so providing freebies is easier. As opposed to this, technological progress reduces employment opportunities except for the extremely talented since the machine does the rest. Finally, technology empowers formation of gated communities of the technocracy. With

time, those in gated communities lose direct contact with the rest. Intellectual arguments of the injustice of inequality fail to deter the descent of societies into dysfunctional anarchies.

Individually We Can : Collectively We Can't

The very idea that only individuals can accomplish things negates the conventional wisdom that unity is strength. How is that even possible? Seems to be an example of extreme individualism. Advanced technology provides more physical power to individuals but a society is a necessity for developing advanced technology in the first place.

There are those who perceive themselves to be weak and see strength in group action. They dismiss the individual achievers as thieves or hoarders of the contribution of the rest. This is loosely the communist thinking. Then there are those who perceive themselves as the producers and hence as owners of what they produce. These can be loosely termed the Ayn Rand followers. But both these extremes are simply unrealistic nonsense. There are however situations in life when a perfectly acceptable individual decision becomes a counterproductive societal norm or law.

How about some examples?

Climate change is the best example. While there is little doubt that carbon dioxide emissions from the 7.5 billion people on the earth are altering the climate, the various national and international programs to tackle the problem will simply not work. The system is too complex. What one gets is only a psychological satisfaction that something is being done. Actually it has become another argument for an egalitarian redistribution of wealth. Consequently, hypocrisy, corruption and conspiracy theories have all become common both to support and oppose these national and international policies. Individually people can commit to reduce their own individual contribution since air conditioning, heating and travel are the major contributors. There is a precedence. Fifty years ago population explosion was a major issue. In fact many "***scholars***" claimed that the battle to feed the population was already lost. The population growth has decelerated significantly since then due to individual life choices not government action!

Most people would find it difficult to accept this. A revolutionary communal change in lifestyle is considered extremely necessary to mitigate climate change.

That is precisely the problem. Where is the evidence that the revolutionary large scale changes would work? More importantly where is the guarantee that the situation would not become worse? In fact the arguments for tackling climate change on a war footing are a paradigm for most modern efforts at societal engineering. The problem is that both society and climate in their own ways are too complex to permit successful human intervention at large scale.

Probably discussing other areas where you claim similarities exist may be more effective. Most people would defer to climatologists as experts.

Unfortunately accepting not only climatologists but also economists and psychiatrists as scientific experts and deferring to them rather than accepting common sense has been one of the problems of modern societies. Common sense is a limitation in the quantum realm but that is no reason to ignore it elsewhere! When a drug addict or an alcoholic expresses his inability to overcome the addiction, at least some segments modern societies tend to be sympathetic. These very segments consider themselves rational and accept limitations imposed by physics on technology. This

rationality is quietly ignored when supporting an alternative medical system such as homeopathy which has as much validity as astrology but that is a different story. More relevant to the current discussion, it is assumed that a society can accomplish anything else it sets its mind to. This is simply not true. The ability to identify a problem does not imply an ability to respond to it, not even to take a step in the right direction.

Be that as it may, let us consider some other issues where individual and societal discussions cannot be aligned.

Taking Microscopic Chances : Fearing Microscopic Dangers

The earlier discussion of the gini is a very good starting point. Consider the football players with a very high gini. Most people would fail. An individual may accept the very low probability of success. The individual can choose extreme commitment to the goal. It is his personal assessment of the value of the goal. There is no way to objectively compare the goals accepted by different individuals and see how much commitment is "*rational*". Encouraging despite low probability of success is sometimes sensible for an individual. It cannot be a societal commandment. Collectively it is recipe for disaster. How far must society encourage activities like sports where most will obviously fail? Society draws pleasure from the successes but what about the failures? Another example with very low possibility of success is scientific research. This once again is an area where the winner takes all. It is one thing to provide sports facilities for health and recreation. Quite another to encourage people to consider sports as a career option or provide government sponsored sports fellowships.

This is a leap from a global problem like climate change to a microscopic issue of society encouraging professional sports. Some people may concede that the existing human population cannot be wished away or reduced without impossibly inhuman actions. So possibly it may be beyond human ability to redress it collectively and individual action may even be superior. But supporting economically weak individuals or encouraging them to take risks cannot be a huge issue. The alternative is that these avenues will only be accessible to the economically secure citizens.

That would not be a bad thing! The economic assets will cushion the failures! An economically weak individual would be well advised to accept prudent behaviour. But the issue is symptomatic of a range of societal approaches. While encouraging individuals to take big risks society is extremely receptive to each and every microscopic danger. The scientific basis for many of these fears is extremely weak or even non-existent. The extremely unscientific demand to prove that genetically modified food items are absolutely safe is extremely popular. Similarly, in the advanced western societies white heterosexual are expected to take blame for the acts of omission or commission of their

ancestors. So there is talk of microaggression, necessity for safe spaces and so on. Societies like India seek to copy these actions. In every such case, while voluntary individual action could be morally justified, collective or legal action is a disaster.

Limits Of Collective Action

This is surely not the complete picture. Admitted that political correctness can sometimes be taken to ridiculous levels, is that not true of all laws? The entire discussion here emphasizes the limitations of all human knowledge so why emphasize this aspect? One has to remember that collective action is responsible for some extremely humane actions. Abolition of slavery or in more recent years the legislation to provide equal rights go blacks in the USA and the dalits in India are examples.

One has to distinguish between the large and the small. Just because large issues like slavery or outright discrimination can be resolved by legal action does not mean extremely microscopic discrimination can also be resolved by the same approach. Thus, the attempts to tinker with the legal doctrine "*presumed innocent unless proven guilty beyond all reasonable doubt*". This tinkering ensures that some males accused of molestation of weak defenceless women are jailed. It also leads to cases of deliberate misuse. This has been noticed by courts in India where the anti-dowry laws had presumed that the accusations by the daughter in law must always

be given more weightage and innocent people were being harassed.

The desire for correcting microscopic disadvantages in each individual case are no doubt unrealistic. No judicial system can provide universal justice. It is a human system with all the limitations. But are these such serious issues?

Undoubtedly political correctness is a minor irritant. As discussed earlier, technology empowers the individual to select those with whom he would like to interact, making it irrelevant in practice. That said, because an individual can overcome microscopic aberrations from socially approved lifestyle choices does not mean he can do so under all conditions. Everyone holds their own preferences are innate and impossible to change and everyone else has to adjust. The preferences of the others are bigoted, and amenable for correction even if the harm they do to others is microscopic. But the real problem is that these are not merely collective actions, they are actions in support of some group. That in turn is based on dividing humanity into two groups, namely the oppressors and the oppressed. The statistical science cited in support is extremely weak as

discussed earlier. Encouraging or legally ensuring that these micro issues are criminalized leads to extremely serious problems for example when forcing parents to cater to every minor issue of sexuality or disciplining of a child. The advice of experts has not been demonstrated to be superior in any sense. The so called experts never concede that failures are a demonstration of the limitations of their expertise. Using the latest advice of penology or education psychology has not delivered but this is never acknowledged.

Limiting Over Reliance On The Individual

In ancient times, lack of success was not a huge issue. Successes were few and distant. Thanks to fatalistic religions it was easier to concede the superiority of the successful ones or shrug off bad luck. At the same time, basic life jobs occupied time, leaving little time for idle dreams and worries. Today, communication highlights one's own failures and reverberating accusations of luck or nepotism behind any success. Life is easy and hence there is plenty of leisure. There is no religion as a psychological safety net. Naturally there will be demands to do something for those without social and economic resources. Should not some excesses be ignored?

The primary issue is not empathy or support. It is the all pervading identity based actions. Ascribing collective guilt for individual criminality is ultimately counterproductive. The first problem is selectively excusing violence from one's own group which is inevitable. It also fails to recognize that individual criminality is most often not directed from above or a criminal conspiracy. In today's hyper connected world radicalization and individual violence could be

autonomous. Best to treat it as an illegal action only. In all cases, innocent unless proven guilty has to be respected. The second problem is that the modern liberal intellectual wants members of the historically dominant groups to consciously associate with the members of the erstwhile exploited groups with the hope that this would reduce or eliminate unconscious bias. At the same time he wants the members of the erstwhile suppressed groups to form a brotherhood isolated from the rest with the hope that they would collectively have strength that they individually lack. Unfortunately the two are mutually antagonistic.

That is of course a very interesting and vexing practical problem. Should one go from here to the extreme claim that personal charity ennobles and societal charity creates dependency? Is personal charity going to be sufficient particularly now that technology enhances connectivity, making it much much easier for the donor and the needy to find each other?

Nothing will be perfect. Neither a government support scheme nor private charity. The failure rates could be similar. Private philanthropy becomes as impersonal and often as inefficient in actual delivery as government services at large

scales. In one the problem is irresponsibility, in the other, diversion to irrelevant pathways. A religious organization would spend more of the resources on saving souls rather than filling bellies. Of course empathy is an emotion and best contributes when it leads to personal action. Share yourself not your money is a wonderful idea but possibly impractical.

Then what exactly is the most severe problem with the society attempting to handle these micro issues?

That societal demands for empathy or revenge go against individual desires. Individuals respond with lies, hypocrisy, cheating and hiding. Technology enables individuals to sabotage these extreme socialist policies as much as the society to detect and punish them. But the cost of detecting and enforcing conformity is high. Efforts to use education fall into the same vicious circle. You cannot convert everyone to follow Rand or Mao. Not everyone will be amenable to the demands to atone for the crimes of ancestors. Many would respond that they will not go to hell for the sins of ancestors nor be embarrassed by their incompetence or immorality.

The biggest problem in democracy is an overwhelming majority. But not because it could exploit the minority as conventional wisdom claims. When a significant minority realizes that it has no chance of influencing decisions, it tends to violate laws and face the consequences.

They lose any inhibition to lies, hypocrisy, cheating and hiding. So the majority is well advised not to be over ambitious in setting goals. This is the major obstacle to democratic socialist redistribution. Organized religion and functional government are both similar. Their existence is useful for individual. One to provide a framework for spiritual growth and the other for a functional society. But overreliance on these will be counterproductive.

There is something common between a committed socialist and one convinced of conspiracies. The one convinced of conspiracies refuses to acknowledge that conspiracies involving too many people will fail since an individual can get a tremendous advantage by becoming a turncoat. One committed to socialist utopia similarly refuses to see individuals deserting the program for selfish reasons and the damage that would accrue. For both conspiracies and the socialist utopia, an

extremely centralized center for severely punishing transgressions is absolutely necessary, like the mafia hitman or a gulag.

For Myself And Me Alone?

The eternal fights between free market and socialist political parties would be eliminated if only people were willing to admit the wisdom of this ancient saying. "If I am not for me, who will be? If I am for myself alone, who am I?"

That is a wonderful quote but needs an addendum. If I try to be for everyone, could I accomplish anything?

Why can't the whole world live like a happy family?

Because families have feuds! There is however one aspect of a family that needs to be kept in view. Family is a personal subjective domain where individuals are not eternally seeking *quid quo pro*. A family loses all meaning as soon as individual members start comparing their contribution to the family and their reward, complaining that they are getting a bad bargain from the other family members!

Bargain is a commercial term! That surely is the point at which feuds, court cases or divorce proceedings in families begin..

One has to avoid the other pitfall. Business is not necessarily bad, immoral or wrong. You need to form a clear distinction between the close family circle where interpersonal interaction is not a business and outside where it could be. If you restrict the circle to yourself you will most likely have psychological problems. If you try to condition yourself into accepting a huge number people into your circle or include nature itself, you will be unlikely to accomplish anything practical. The goals devised to benefit such large groups will not only be extremely unrealistic and unrealizable, objective evaluation of their efficacy will be almost impossible.

Yes, issues such as having to defend and justify unsavory group acts have been discussed earlier, but why this insistence that outside a family, emotion is not an acceptable approach?

Family is indeed a limited word in as much as it normally refers to individuals related to one another by birth or marriage. It is better to talk of an inner circle of family and friends where love and emotional bonds dominate.

But that is not only unsatisfactory but also factually incorrect. One routinely talks of loving one's own country.

Nonetheless it is meaningless talk. The common expression falling in love makes little sense when you think a little. Love is not a noun. It is an adverb. Your actions have to demonstrate love. Expressing love for the immediate family through your actions is difficult enough. You cannot decide what action is correct or desirable for the members of your family let alone world at large. You can proclaim loudly, "*I love my country*" but any action that you undertake will inevitably harm some, help some and most would be indifferent. Self sacrifice of the military in war induces the "I love my country" claims. .

Surely one can trust the commitment of a soldier rather than of a mercenary. Same is the case with doctors and other public spirited individuals.

But those very examples illustrate the difference between emotional personal actions and the intellectually constrained objective actions even for an altruistic cause. A general may claim to love the his soldiers like his own children but would unhesitatingly order the army into a battle where he knows a third of the soldiers would perish. A doctor may constrain himself to serve for charity but still not perform surgery on his own child. The roles of emotions and intellect in defining human action would be taken up later

but for the present it is necessary to recognize the natural dichotomy in human personal dealings. For an individual, there is an inner circle within which his actions are driven by emotional bonds and outside which he takes objective decisions. In the first he would not balance effort and return. He would put in enormous effort knowing that failure is inevitable or that returns will be paltry.

In some cases the outside observer may feel that one individual is irrationally emotional in family matters or that another is irrationally inflexible in commercial business by not allowing emotions any role. So how come this dichotomy is of any use?

It is easy to shrug ones shoulders and say it is fundamental right of the individual to be irrational. But some situations would develop where the society would feel compelled to step in and restrict the individual in both the situations. In democratic societies, this societal intervention is left to objective criteria or expert advice. This is claimed to be not only less arbitrary but less prone to misuse than subjective decisions. The problem is the world is too complicated and the objective knowledge fails to deliver.

*That once again has been discussed time and again in this conversation. Returning to the issue at hand, on an average, people would emotionally justify some actions and suppress their self interest but in other cases would let self interest be the guide. Just shows that the **homo economicus of laissez faire** economics is far removed from reality.*

Duality In Societal Organization

Homo economicus is just as much an unworkable abstraction as the contemporary demand for an objective expertise to resolve all human issues.

Unfortunately this is not conceded by an overwhelming majority. But returning to the current discussion, the loose bifurcation of humanity into emotionally bonded family and friends and a commercially interacting rest of the world is a good framework for the question raised earlier, namely how to balance the interests of the self and the society. There are only two systems where large number of humans can interact with minimal friction and violence, democratic law making and commercial trade. For societal policies, mirroring the family, there should be a domain dictated by democratic empathy where we do not ask questions about utility, efficiency etc. Outside that however, we leave it all to commercial choices. In both there is the possibility of failure to universally help everyone. Affordability is another limitation. Disregarding these and insisting that the society should help everyone, whatever the cost is however dangerous.

Deficit financing, essentially shifting the burden to succeeding generations has to stop and affordability has to limit democratic spending.

It is interesting to note that in contemporary democracies, the son is not liable for the debts of his father but liable for the debts of his father's generation through the government.

Admittedly, affordability is a serious issue. But universality? Humans will want to express their empathy beyond the immediate family and friends. They would not universally join the Ayn Rand brigade even with the best of propaganda, neither will they willingly join the Marxist utopia without force.

Dictatorial powers are required for socialist redistributive policies to work effectively. The Indian experience where socialist redistributive philosophy is unchallenged in the political sphere is very instructive. In India, all political parties are socialist and all have become dictatorial because failure of policies can never be attributed to their being unworkable. All failures are due to conspiracies and treachery.

But there are two reasons why the suggestion of bifurcating society into two spheres, one

emotional and the other commercial may not succeed in a democracy. One is the fear of the slippery slope. Both the right and left would see this as an ideological concession that could eventually destroy their ideology. The second is that identity politics have always played a significant role in democracies. Well before the left co-opted the minorities and LGBT groups, the right raged against the godless reds to get the devout to vote for their economic policies.

Of Broken Windows And Breaking Laws

Broken window syndrome is real enough. If you see a few pieces of paper littering a corner you would feel no remorse adding your own garbage to the pile. But why is that relevant?

The liberal would want to rectify this by spending money on the people who litter. The conservative would want to punish them very severely. Unfortunately neither will work. People who do not like littering will segregate themselves into a gated community. This is apartheid in reverse.

*It is better to call this the **ivory tower**. The argument here is that technology enables this isolation and that this cannot be prevented in a democratic society; that people cannot be educated or argued into universal empathetic behaviour.*

India is an excellent example of a society intellectually committed to socialist group thinking. More than twenty years after the so called liberalization, there is not even one political party that admits that the post independent redistributive economic policies are

the cause of the malaise. Indians have perfected a habit of dishonesty and hypocrisy. As expected, in an undisciplined society even revolutionaries degenerate into mere brigands.

All rules are stupid in the sense that there are always exceptional situations where the rule causes a clearly bad consequence.

But rules and discipline are necessary. When rules can be discredited on the ground that the weaker individual should never be further troubled, there will be no end. Initially a few violate the rule and they benefit. That attracts others to do the same. People also get into a habit of breaking rules for really petty benefits. Ultimately one has a dysfunctional society.

*Hypocrisy is another pathway in such societies. Once upon a time those who renounced their wealth and privilege without waiting for the proletariat to confiscate them were to be admired. Now with identity overtaking ideology, grovelling about the crimes of the ancestors is sufficient. You can enjoy the privilege and wealth. Like the Carpenter in **Alice in Wonderland**. The Carpenter shed copious tears so that he can hide from his partner in crime that he is eating more than his share.*

Despite the validity of some of these limitations, one cannot simply wish away the contemporary animosities between groups.

In contemporary society, if these arguments are made by the member of an erstwhile dominant group the response is an accusation that these are clever tricks to perpetuate exploitation of the weaker sections. If by chance a member of the weaker section himself voices these opinions, the best example being a black conservative in USA, it is termed treason and personal corruption.

The consequences are before you. Extreme positions such as blaming ancient scientists or even western science itself are quite common. The problem with identity politics is that everyone is forced to justify or at the very least excuse excesses of one's own side.

Isaac Newton should not be viewed as a man, a whiteman, a European, an Englishman, a cruel administrator, a vindictive megalomaniac etc for praising or blaming groups.

Part of not accepting responsibility for crimes of ancestors is not to claim credit for their accomplishments. Personal character cannot be

the criterion for either praising or condemning an individual who provides an objectively defined service for you. That is reserved for spiritual perceptors not politicians or scientists. But these are pretty unpopular views.

Perhaps it is sensible to concede that the Marx inspired division of humanity into the oppressed and oppressor groups is intellectually silly.

The Victorian white man held the blacks to be inferior to himself and justified it with Darwinism. The modern black intellectual holds that the blacks cannot compete because of Lamarckian inheritance, due to suffering under slavery and demands reparations. Both are equally unscientific.

Old time vedic knowledge was effective in controlling the lower castes more through fear of the unknown and unknowable afterworld than economic power.

The Brahmin invested too much in acquiring the "knowledge" to easily renounce it. That the knowledge had no objective validity or use did not limit his ability to browbeat the rest into giving him preferential treatment. This has similarities to the modern expert social

scientists stuttering around with improbable science than will be conceded.

A communist thinks that all the material wealth of the west is theft from the poor of his people. A Hindutva ideologue thinks that all the intellectual property of the west is theft from ancient Hindu rishis. There is a similarity.

He that hath not sinned throw the first stone should not be an injunction against my pointing out a contemporary crime just because my grandfather has also sinned. While injustices and suffering should be taken into account in individual cases, making it public policy to correct historical injustices is counterproductive. Taking blame for historical crimes of ancestors is considered noble. This self loathing for privilege can also be cited as hypocritical shedding of crocodile tears.

Fearing The Slippery Slope

There was an era when segments of society were denied basic human rights. Slavery and untouchability are only the most visible examples. Enlightenment introduced the concept of fundamental rights. To extend these to groups like blacks or dalits is an ongoing process. The LGBT groups are only demanding that couples in such relationships be not stigmatized and given equal treatment with traditional heterosexual married pairs.

There is no justification for any legally sanctioned apartheid. It is worth remembering that not too far into history an atheist was not even permitted to give evidence in a court of law in most Christian societies. The history of separate but equal laws in the southern states of USA is also a warning. A large section of the society was excluded from the mainstream through cooperative private action by the dominant group. So government intrusion into private activity to protect the weaker sections is sometimes necessary. But unfortunately, recognizing this as a fundamental right has been extremely counter productive.

Most certainly because both fundamental rights and responsibilities (for those on the right) cannot be precisely defined.

A literalist interpretation of a written constitution is exactly as limited as a literalist interpretation of the Bible. A constitution at least has a provision to amend it as per requirement. Both are attempts to create commandments using language without recognizing the essential limitation of the written or spoken word. A word has no meaning in itself without reference to the world any more than the word *love* without it being the quality of some action.

The socialist would see the start of a slippery slope towards apartheid or even slavery everytime a baker refuses to create a cake for a homosexual couple. A devout Christian would see the same slippery slope whenever a school student is reprimanded for introducing prayer into his graduation ceremony. Same for a committed free market ideologue.

Everyone unfortunately fail to see that the ability to peacefully amend the constitution is critical. Constitutional approach follows the scientific experimental method. It short circuits the slippery slope.

Margaret Thatcher followed Clement Atlee's socialist policies. Lenin was only followed by dictators till Gorbachev destroyed the system itself. With all its faults, the American revolution resulted in a stable democracy. For all its idealism, French revolution resulted in the coronation of Napoleon Bonaparte as the emperor of France.

The modern insistence that every microscopic disadvantage has to be compensated mirrors the unwillingness to tolerate any delay and condone or even applaud transgression of the letter of the law when it is in favor of one's own ideology. It also accounts for the ever expanding list of fundamental rights.

Let us consider one example that is very popular. Is healthcare a right or a privilege?

It is neither. Consider an individual who drinks himself to cirrhosis of the liver. Is it his fundamental right to receive at societal expense a liver transplant? On the other hand consider a child of this drunkard who gets neither proper nourishment nor vaccination! The rights language is merely a cover for protesting that a rich drunkard can afford the treatment. The preference is for an objective or more correctly

an impersonal decision taken by experts rather than subjective decision by the individual or family. However, unless all wealth is nationalized, the super rich can afford it in any case. It is just like reservations or affirmative action. The outstanding performers do not worry. They can even support the policy, display self righteousness and get approbation as a bonus. It is the larger number of not so rich or so bright who protest, in very intemperate or foul language.

For an individual, a dichotomy was defined. The family and friends is an entity where actions are emotional and largely dissociated with the commercial transactions dominant outside it. It was proposed that a similar dichotomy was useful in the societal context. But in view of the repetitive exposure of the limitations of social activism, there seems to be no role for empathy and protection of weaker segments beyond legal universality. Despite repeated assertions to the contrary, the arguments here looks like supporting Ayn Rand philosophy. Where exactly is a role for social activism?

Universal Safety Net Is Necessary : With Limits

The failure of social sciences to offer workable remedies for many human problems is obvious for any impartial observer. It is entirely expected. After all mainstream medicine, grounded firmly in physics and chemistry cannot be fine tuned for every individual. To expect inherently weak social science to accommodate the far more complex human behaviour and psyche is foolhardy. That said, over reliance on individual action is silly. It is the best that can be accomplished in the case of climate change, but for provision of a universal safety net, societal schemes are better.

Claims of religious or personal charity being superior are as unsubstantiated as social science. So are arguments of economic efficiency. Even more importantly, near universal unemployment because of technological progress is not a myth.

What if a minuscule minority aided by technology can take care of the entire world? How to live in a world without work? Universal safety net which assures physical living may not be sufficient but it is surely necessary.

Studies of tribal societies seem to indicate that individuals spent more time on art than foraging. Can modern society adjust even with a safety net? Globalization has already created localized regions of severe unemployment in advanced, rich societies.

Nobody seems willing to concede that the economics 101 lesson, arguing that wine is more efficiently produced in France and Whiskey in Scotland, with trade helping both is irrelevant in today's world. Today, competition is merely about how much pollution is permitted in that location and how low are taxes. There are no advantages of local natural resources or manpower skills behind China becoming the manufacturing base for advanced societies. The advanced countries are imposing ever more strict environmental controls and living off the technological innovation by a very small, highly skilled group.

Those in the advanced societies who miss the training, emotional support and guidance in the early years of their life are left to a life of dependency on the safety net or fighting for an ever shrinking number of menial jobs that have to be performed locally.

The gated communities of highly skilled people may not in future need even these services as robots takeover, permanently sealing those gates. Obviously a universal safety net cannot ensure absolute equality of opportunities let alone equality of outcomes. But the prospects of reducing inequalities in a democracy are as bleak as the international treaties reversing climate change. An honest acceptance of this reality can perhaps help some of the individuals to discard their trust in the chimera of affirmative actions and take responsibility for their own lives.

How far can the safety net be strengthened to minimize this?

Once again, contrary to emotional socialism, all profits cannot be appropriated as taxes for redistribution. Part of profits have to be invested for future. The communist party in the erstwhile Soviet Union and the government bureaucracies in democratic Britain and India have demonstrated that they are incapable of overseeing investment for overall societal benefit. If investment of even a part of the current profits is left in the hands of individuals, there is no way that the inequalities can be lowered let alone eliminated.

So, a democratic society has to ignore worries about inequalities, which like climate change are beyond its capabilities to correct, renounce affirmative action for microscopic disadvantages and maximize spending in universal safety net while permitting reasonable reinvestment of profits.

That balance once again has to be found by trial and error, not economic theory.

To sum up, once upon a time man's life was very difficult. His capabilities were very limited. He began to think too much of the world beyond his. He couldn't objectively prove that the God whom he trusted had helped him, but continued to believe anyhow. In the present technological society, capabilities have undoubtedly improved. But he worries about microscopic difficulties. He trusts objective science that gave him power over major problems. Objective evidence suggests that science cannot resolve the micro problems but he refuses to abandon the futile effort.

Mathematics teaches you that a few axiomatic rules in real number system lead to deterministic chaos. Many still seem surprised that a commandment view of religion or law leads to

chaos. They still resist a pragmatic resolution of both the subjective and societal issues.

What Am I? Who Am I?

The earlier discussion seems to imply that individual has a close circle of family and friends where the relationships are largely emotional. Emotional bonding of a very large number of individuals through a common identity is therefore essentially counterproductive and the society can at best provide a universal safety net and ignore minor transgressions or hurt sentiments. Most people would think that identity beyond that as an individual is not only necessary in a democracy to eliminate discrimination but a scientific reality that is being challenged by religious fundamentalists and the erstwhile dominant groups to continue their exploitation.

The first issue to be acknowledged is that identity is a matter of personal choice not objective scientific reality. Consider the identification of President Obama as the first black president of the USA. Fully fifty percent of his genes are from his white mother. To argue that his skin color prevents his assimilation in whites is not really relevant. Genes did not define his identity any more than the presence of the Y chromosome in every individual cell and external

genitalia do not define the identity of a transgender.

The identity is obviously not always genetic but based on emotional and neurological experiences. The trauma of racial abuse could be a shared experience behind identity. Scientists point out that development of a fetus could result in a dissonance between the physiological genitalia and neurological perception of sexual identity. There are of course some genes associated with homosexuality.

But these justifications will exhibit precisely the limitations associated with weak science discussed earlier. A small difference between two largely overlapping distributions due to the presence of a particular gene or a single instance of abuse is seized upon and demands made for societal intervention. But the probability of the exact opposite may be arbitrarily close to fifty percent.

This was discussed by pointing out that the statement, on an average men are taller than women is true to an extremely high accuracy but the probability that a random woman is taller than a random man is often quite significant.

The distribution of heights overlap only modestly but in most claims relevant to identity politics the distributions overlap completely and it is only a precise scientific experimentation that permits even an approximate confidence of the claim. But all this has been discussed repeatedly earlier and is not important. Once the free choice of an individual to choose any identity is affirmed, the strength of the evidence or justification should be irrelevant but not in contemporary society!

Why? Possibly because of mistrust that recognizing identity as a personal choice will not end overt and covert discrimination.

No. The reason is this unfounded belief that social justice is possible, that every perceived microscopic disadvantage can be and must be redressed. As has been discussed before these are not possible and technology enables segregation rather than social justice. Even more importantly, there is a desire to stamp out apostasy and blasphemy at the heart of these social justice arguments.

Anyone familiar with religions across the world wouldn't fail to notice that the strongest punishments were ordained for the blasphemer or the apostate.

Weak science is a handy tool for self justification and convincing oneself that the actions of the social justice warriors are only objective and fair when they are actually attempts to retain the congregation. Conceding that identity is a personal choice would be fatal for that program.

But this is not simply acceptable. An identity is not equivalent to joining a club and paying the membership.

It is not? Consider being a Christian. For most Indians that is one identity. Given the large number of sects, and the sectarian violence of the past, it is equally correct to say that each sect is a different identity. In fact there are Americans today who argue that the constitutional provisions of right to practice a religion refers only to Christian denominations. Individuals routinely renounce one Christian sect and join another.

So the scientific claim that gender is not necessarily a binary between male and female is equivalent to insisting that the physical organs define gender?

This is a silly problem of semantics and sentiments. Why do you need to define a gender

in a public document, say a passport or a driving licence? Its only possible utility is in visual identification. It is like accepting that the earth is flat for town planning. A useful approximation. Why should I know or care if an individual in front of me has one among fifty different gender identifiers? And why should these not be unlimited? For example one can define a new category of people who preferring a machine as a sexual partner! Liberals claim that the forced identification as male or female is an emotional trauma. One more example of a micro injury. It is also sometimes a reflex opposition to the traditional Church at least in the USA. The reason for stressing on the multiple choices is to persuade a larger number not to self identify themselves as the traditional male or female. Another example of trying to build numbers in the democracy game.

Nothing can be precisely defined. That of course as discussed earlier is a limitation of human language in any domain outside physics or mathematics. After all it, is very difficult to provide an objective definition of a living being as opposed to a dead one.

There are eternal arguments even in academic circles to decide if two living beings are

members of the same species or two different ones. Deciding if an individual is legally sane is again not easy. So sane and insane cannot be objectively distinguished and so on.

So it is no great issue if the male and female cannot be precisely defined?

Absolutely true. For that matter while the subjective perception of the self is presumably universal, even that cannot be objectively described. One simply intellectually argues that since there is not much to distinguish between oneself and the rest of the human beings (aside from the eternal arguments of superiority and inferiority) they are all sentient human beings. But when an individual is declared legally insane or incapacitated, his subjective identity is being challenged. Even in less extreme cases, psychologists define multiple personality syndromes and there are physical, emotional and intellectual limitations.

So just as a social group identity has the problem of accommodating and compromising with individuals with undesirable or abhorrent attitudes, an individual self has to accommodate the not so nice parts of oneself.

But the key issue is not searching for meanings of words but to decide on individual and societal actions. For this, the tendency to consider the individual self as an impotent entity controlled by societal circumstances or genetic traits is a huge disadvantage.

But this seems to accept the religious claim of humans as uniquely created by God!

Evolved Beyond Evolution

God is not necessary to recognize the unique position of humans among living beings. There is really no doubt that man has evolved from inanimate matter through a process defined by physics and chemistry. The best evidence for this is not to be found in the complex process of evolution of species but in physics. It is physics that confirms that the sun is a second generation star made of material produced in earlier stellar explosions. The molecular structure of the T ribosome which translates the genetic information into proteins validates the theory of evolution! The molecular mechanism shows that the genetic code is random and the fact that all organisms share the same code proves a common origin. It also shows that proteins cannot change genetic code.

So the Bible literalists in the USA for example are simply wrong in opposing the theory of evolution. Despite the play of words, the Hindu mythology of the ten incarnations has nothing common with any scientific enquiry. But in that context why should one view humans not as another species but as a unique one? And unique in what sense?

Humans had evolved beyond evolution. In contemporary societies it is often a warning issued because of the recent advances in reproductive technology; cloning, creation of artificial genes and so on. But this process actually began with the evolution of humans as a species itself. Fossil evidence affirms that almost as soon as they evolved in the grasslands of Africa, ancient human dispersal started, spreading from there to Tasmania near the south pole and Alaska near the north pole. It is not being recognized that this effectively eliminated survival of the fittest. If resources were insufficient, other species evolved to more perfectly fit a specific ecological niche. Man migrated to newer locations since he is able to survive in each and every location.

What of the emergence of lactose tolerance among adults in pastoral societies or sickle cell anemia in areas with diseases carried by mosquitoes. Surely these are examples of evolutionary pressures on humans.

Such examples are rare. More importantly these are not universal traits. People without those benefits survived in human societies in those societies. Even individuals with *hemophilia* survive to reproduce in human societies.

Impossible to imagine such a state with any other species. While accepting the right of an individual to choose among a large variety of human sexuality one cannot overlook the fact that they are evolutionary dead ends. Losing a significant fraction of adults to such behaviour would be fatal in any other species. The survival of slightly more than two of the offspring per pair is accepted as necessary to maintain a stable population. Female wild animals actually give birth to much larger numbers to achieve that target, necessary for survival of the species.

What of the various investigations into animal societies and culture. There seems to be extremely wide variety and depth to animal behaviour. The observation of homosexuality in animals is another big argument of it being natural too.

Careful observation and study have revealed extreme complexity even among social insects. So behavioural studies among animals are always fascinating. But primate culture does not warrant including them in the United Nations! Just because an animal is observed to perform some cognitive activity equivalent to a human of a particular age does not mean the two are equivalent. The human is not defined by that

particular cognitive activity alone. There are many questions. For example, man may teach a chimp to use quite a few gestures but one chimp cannot teach another so many. So how did these "*cultural practices*" emerge? By imitating chance observations? How much of the culture are chimpanzees able to retain and propagate? Given the extremely limited communication skills, it is too much to demand that dolphins or elephants or chimpanzees should be recognized as sentient beings. The issue of animal sexuality is overhyped. Animals respond to certain visual signs and possibly smells of ovulation. Animals in general are extremely dependent on the sense of smell. There could be any number of unknown cues triggering such behaviour. Even among humans the role of pornography as trigger to sexual activity is quite well known. To apply the word "*sexuality*" to a non human is simply unacceptable. The whole argument of any sexual orientation being natural is a *non sequitur* as far as this discussion is concerned. Animal mothers are known to abandon or even kill their offspring. Is that natural behaviour in any sense relevant?

There is also the other intellectual conceptualization of Gaia, the whole of nature as a living organism that could die due to human beings. Of

course this is as controversial as calling a dolphin sentient.

Gaia, or for that matter the internet or the economic systems are not living organisms. They will not collapse in one catastrophic end. The reason is the existence of a number of individual sentient players in them who will be independently and locally making repairs. These "engineers" are the saviours. The "scientists" who dream about logical redesign at a global scale will fail just as the intellectual religious people who seek to find salvation not for themselves but for everyone in the world.

What does it really mean to talk of humans as another species? Gandhi and Hitler are both humans? Should we think of the humans as individuals alone? What really characterizes this species which as discussed above is distinct from all the rest of creation? It is this question of what we are and who we are which defines why we are here.

Becoming a committed member of a group, virtually converting human society into a wolf pack or an ant colony is not an evolutionary advance for human society. Individualism is a necessary component of human success. At the

same time, ignoring biological requirement of stable association is as stupid as trying to enlarge the group to associations of billions. The balance has to be by choice of individual behaviour not laws.

What Am I? Who Am I? (Contd.)

*Can we now return to the questions? What am I?
And who am I ?*

The first is rather easy. Every human being is a collection of atoms, some of which have formed in the same stellar explosions that created a debris for the formation the sun and the solar system. Further, the atoms constituting the body are in continuous flux, with new atoms entering with each breath of air and each morsel of food being eaten. The living organism is best compared to the theoretical concept of a thermodynamic system in physics. There is a boundary with exchange of both matter and energy across it. The rules of physics and chemistry are completely obeyed during this exchange of matter and energy. Thus, physics and chemistry limit the conditions under which this dynamic exchange and existence of a living organism can survive.

This is perhaps the least interesting and unimportant attribute of a living organism. Its autonomous behaviour is what defines a living organism. That is not only extremely complex but not easily reduced to physics and chemistry.

The basic living process is also influenced by technology. It is not only possible to extend life, sometimes indefinitely, using machines. It is sometimes possible to develop pathways of existence that have no correspondence in nature. Just as an example, an air breathing human can be made to live with the lungs filled with a fluid which has the ability to transport oxygen.

More importantly the behaviour is significantly altered by external molecules. Imagine a human being injected with a drug like heroin or even pure alcohol. One can even site the sexual excitation triggered by pornography!

Even mere sensory inputs are sufficient. There are physiological and behavioural changes in a cat triggered by the sight of a mouse. An extremely wide variation in behaviour of living organisms can be attributed to molecular triggers generated within the body or introduced externally. Opioids are very effective in changing behaviour and so very addictive because they are very closely related to molecules naturally created by the body for its sustenance.

Similarly the obesity in modern societies is due to overconsumption of sugar and fats. The

humans find it difficult to overcome the craving for these in an environment over supplied with them because they evolved in an environment extremely deficient in these.

Behaviour of living organisms can be loosely classified into three groups. This classification is approximate. Just as the approximate concept of a flat earth is useful for many human activities this classification is very necessary for the remaining discussion. The first type of behaviour is mechanical or automatic. A good example is breathing. The living being is scarcely aware of breathing unless engaged in strenuous activity or suffering from some bad health. The second are the kind of behaviours described above. For want of a better word they are termed *psychological* here. They are not the consequence of symbolic thought exclusive to humans. The third variety of behaviours are human actions based on such thought. Some neurological activity is perhaps involved in all three groups but the last is extremely or totally neurological. As a good example, coughing due to smoke inhalation is an automatic reflex action. Addiction to smoking despite the pain of coughing is an example of the second group. Logically understanding the link between smoking and coughing and desisting from smoking is an example of the third.

The elaborate earlier discussion regarding the various aspects of science and society highlight the limitations of the intellectual ability to understand the living organism and its interaction with the environment. Just as physics and chemistry limit the physical survival of the living organism these limitations restrict the extent to which the intellect, individually or societally can transform the living human being.

One could approximately identify the body, the mind and the intellect with the three types of behaviours. The answer to the second question, who am I is then revealed; the combination of the body, the mind and the intellect. Each influences and limits the other two. All three are constituted of atoms. The individual atoms are replaced in time but as long as a living human being survives, the three exist as patterns in the atomic ensemble.

While I Am Here, What Best Can I Do?

Is there is no guide to human action at all? On one side, fundamental physics seems to rule out any authenticity for religion. The emergence of a human being seems to be a random event given that a stellar explosion several billion years ago is necessary for human evolution. At the other end, science at human scales involves merely statistical correlation and is most often an unreliable guide to human action. At least that seems to be the thrust of the earlier part of the discussion. Innumerable religious individuals had concluded that anyone who does not accept a religion as the basis for morality cannot justify any goal or moral standard for human action since an atheist invariably argues that the universe itself has no goal. Most atheists however argue that philosophy, logic and most importantly science are a better guide to human action and the current discussion limits that approach too.

Both the devout and the atheists wish to convert religion and science into a series of commandments. Ironically, ***The Ten Commandments*** of

Abrahamic Religions have been a great ideal even for atheists. At the heart of this desire is an utter disdain for the ability of an individual to seek his own path. The average individual is expected to be strongly corralled, by the religious scholars, saints or the scientific experts as the case may be and follow the commandments like automata. It is a great irony that religions which seek to invoke the so called “*free will*” and responsibility for their sins or salvation refuse to give a free will to the individual to find his own path. The scientists follow suit, overemphasizing the strength of science. The problems identified with scientific endeavor in the earlier portions of the discussions could be philosophically viewed as emerging from this basic flaw of reducing science to a series of commandments.

There have been some claims that science and religion are independent magisteria. But that is the viewpoint of an extreme minority. It is not very clear what constitutes the boundary.

It is more useful to use the imagery of a fractal as developed by science to get a feel for what the relationship between science and religion actually could be. Words are at best an approximate way to describe reality but even then the word *faith* is a better description than

religion. To act in faith is to accept, not explain. No human being can consistently base his action exclusively on science and logic any more than he can on faith. There isn't any one who devoutly lights a candle in a gale. More often than not, acceptance of a scientific logic is based on faith in an expert, borne out of a sense of incompetence to argue, if not sheer laziness or weariness to do so.

The limitations of the scientific and logical approaches could be analyzed because they are universal. Dismissing creationist science, homeopathy or astrology is relatively easy. But how to evaluate the limitations of religion? There are so many religions, from animist faiths with a few hundred tribal followers to the universalist Abrahamic religions, Christianity and Islam. If faith is recognized as an inevitable contributor to human action it also seems impossible to even discuss it.

It would have been equally impossible to discuss each scientific discipline in its entirety. First one has to understand what religion is. There is now anthropological evidence that humans had "religious" beliefs almost since the time modern humans emerged and migrated across the globe. Contrary to some claims, religion is not a set of

rules that were selected by the struggle for survival. There is not enough time. The rules do not confer any advantage in survival. As mentioned earlier, there is no selection pressure on humans. Group selection is impossible in Darwinian evolution and to look at religions in that context is nonsense. Groups of humans have achieved visible ascendancy in recorded history. The Muslims immediately after Prophet Mohammad and the Europeans post enlightenment are good examples. But their success is due to superior social organization in the case of Muslims and superior technology in the case of European, unrelated to their religion. Religion is always a consequence of the intellectual question. Where am I when I am not? What happens to my subjective self?

Does this mean that religion is necessarily immune from objective scientific investigation? What about the authenticity of historical accounts in mythology? What about the medical claims of meditation and other spiritual practices associated with Buddhism and Hinduism? Even more importantly most people in contemporary world are religious because they believe in miracles wherein faith and prayer can cause results that are in conflict with objective science.

When you claim scientific justifications for spirituality you end up insulting both science and spirituality. As for genuine objective verification, no investigation starting with Galton's original attempt to see if priests had a higher chance of surviving shipwrecks has yielded any positive result. At best one has one off claims of verification that are not repeatable. The Catholic Church recognizes miracles as evidence for designating certain individuals as saints. In a fit of enthusiastic confidence, they tightened the process of verification of the claims of miracles on scientific lines. They very rapidly found that none of the claims were being verified and diluted their criteria. So an atheist is quite justified in refusing to accept miracles or even ridiculing those claims. But from a purely spiritual point of view could one expect objective validation of miracles? Any such verification is a direct objective proof of existence of God or divinity. Objective verification is an intellectual proof and the proper spiritual definition of God and Divinity is that they are beyond the body, mind and intellect. In this spirit, the following comment is very appropriate for those Hindus who try to argue about the identification of Rama Setu as the bridge built by Lord Rama in the Ramayanam, or Krishna's palace submerged in the sea as described in the Bhagavatam. "If

these physical structures are indeed those of Rama and Krishna, they are not Gods and if they are Gods, these structures are not authentic."

Much of the Bible and the Koran is historically true but that does not automatically validate the miracles recounted therein. Once again that is no reason to think that everything in the elaborate Indian mythology is historically true or false.

Indian Religion And Mythology (A Diversion)

Actually the issue with Indian mythology and religion is extremely complicated. A tribal recognizes only his God as the true one. Birth is the only criterion both for belonging to the tribe and for accepting the God, customs and mythology of the tribe; that is to accept the religion. Christianity and after that Islam emerged as universal religions. Acceptance and obedience are the criteria for joining and not birth. This was preceded by the emergence of kings and empires. Both the religions insist that no God other than Jehovah or Allah as he came to be called in Arabic can be accepted. The Jews accept the same God but only for the members of their own tribes. Religions in India have a different path. The Aryans as described in the *vedas* are a typical tribe with their own set of Gods, a mythology and a ritualistic worship with the fire being the carrier of the abulations from the individual to the God. The Hinduism that exists today has a different multitude of Gods, with the Aryan ones becoming subservient, a completely different mythology, the concept reincarnation, a form of worship where the God is invited to be present and offered the same sort

of hospitality that one shows to an honored guest and above all else a reluctance to treat those worshipping a different god as mortal enemies.

The history of India according to contemporary academic historians does not certainly give primacy to these issues. But to fit the emergence of Buddhism and Jainism into this framework also appears problematic.

The philosophical position of both Jains and Buddhists is that a God who can forgive your sins does not exist. Only personal wise action can mitigate the bitter consequences of wrong actions in this and earlier births. Their respective mythologies clearly affirm that the various *Tirthankaras* in Jainism and the various incarnations of Buddha as *Bodhisattva* in Buddhism are only exemplary examples and path givers. They do not grant salvation. That has to be earned by personal action only. Modern Hinduism, accepts a role for individual action but insists that God can intervene at will in the cycle of karma as an *avatarapurusha*. The modern devotees of Ramakrishna Paramahansa or Sai Baba follow the tradition, insisting that these are also incarnations and not only saints. This unified view of Hinduism has been certainly

completely developed by the second or third century before Christ and there are no historically confirmed kings and empires at the time of Mahavira or Siddhartha Goutama.

Then there are huge problems unacknowledged by academic historians! If Aryans dominated the country why did they surrender everything they held sacred? If there were no kings and empires to dominate how did an Indo-Aryan language, Prakrit become the language of the masses by the time of the Buddha?

Possibly because the philosophical ideas of contemporary Hinduism predate the Aryan entry into India. Perhaps the religious tolerance unique to Indian culture was responsible for assimilating the Aryans. The *vedas* have been given nominal credit for all knowledge in modern Hindu tradition. The consolidation of the Indian mythology in the Indo-Aryan language, Sanskrit may not imply that these ideas are Aryan in origin. Even in contemporary world more original thought about Hindu philosophy is in English but that does not make the thought European.

Ancient Indians created elaborate mythologies because the technological skills of the era were the limitation for engineering marvels on a large

scale. Architecture had to be limited to temples and palaces. Modern Indians continue to create myths to escape from the realization of their own lack of competitive success. Their indiscipline results in incompetence, ensuring that they can't alter the reality.

Mythologies are created to convey a message. They are never logical but they have an aesthetic beauty. Myths are also illogical but they have no message. At best they serve as call to attack a target for retribution.

While I Am Here, What Best Can I Do? (Contd.)

Returning to the original issue, can identifying a viable methodology for individual and societal action emerge, from an understanding of the fractal nature of science and religion?

Objective scientific exploration cannot find any goal for the universe. That is not surprising since goals are a result of subjective self exploration. They are relevant because humans have an ability to communicate their goals to others through the medium of language. This idea itself is not new. Ancient Buddhists for example explicitly stated that human language was necessary for the rules of *karma* (suffering the consequences of ones actions) to apply. When they created a mythology with humans born in the next life as animals or trees they retained the ability to speak human language. The whole of the earlier discussion is a warning against setting over ambitious goals. If you overreach yourself you are more than likely to fail. It is here that the extremely elaborate philosophical exploration in the Hindu religion comes in handy. The discussion below accepts some of these ideas but the interpretation is completely new.

The ancient names have been retained because that eliminates the necessity to periodically re-emphasize that in the present context the word means something specific. The first of these are the three debts an individual is said to owe. Traditionally these “*runas*” were for the *pitrus*, {the patriarchal lineage} the *rishis* {the creators of knowledge} and the *devas* {the gods}. One tradition insists that the individual should not seek personal salvation unless these are discharged. The second triad of concepts that will be discussed are *neeti*, *nyaya* and *dharma*. These three are commonly employed in all Indian languages. *Neeti* is normally meant to be morality and *nyaya* is translated as justice. *Dharma*, thanks to the glorification of Buddhism is supposed to mean rightful conduct. The three will however be used with a different meaning here. The final concept is the much used and completely misunderstood concept of *yoga*. All these will be discussed in the present context without any pretence that this is what the ancient Hindus or for that matter anyone else meant. In other words the discussion must be accepted only if it makes sense.

This attempt to selectively mine Hindu philosophy reminds one of the famous statement of Gandhi that there are both diam-

onds and dung heaps in Hindu religion. This is true, but the leftists and progressives decline to recognize the diamonds, the Hindutva groups refuse to recognize the dung heaps. Hopefully the present definitions would have a balance.

Absolutely. There is no obeisance paid to Hindu practices or customs. The goal is to remain consistent with the previous discussion. Subjective and objective knowledge exist simultaneously. The physical, emotional and intellectual entities exist simultaneously. One subjectively experiences the universe through sense organs but understands the universe with the intellect. Both have limitations. The first is unreliable and cannot be shared. The second can be shared but has limitations of usability aside from inherent limitations and mistakes. The second also tells me that in your universe I am an object and you are the subject. When one looks inward intellectually one recognizes that the body the mind and the intellect all part of the conscious self. Each is partly independent. What then is my goal as the subjective conscious entity?

Independence is nice but when you are independent you will not develop the training for give and take that is needed at some point. The

emotional bonds that can emerge with give and take are absent. So over reliance on the individual leads to isolation and associated problems. So the religious exposition has to resolve the differences and realize a balance between the demands of the self and the society.

The solution to the societal problem is well known, democracy. The present discussion completely supports that solution. The extensive discussion of the limitations of science to resolve even specific issues is the best argument against any kind of centralized top down organization of the human society. Ideologies are essentially extrapolation of local scientific data into commandments. All of them from the first formalized description of such a system, Plato's *philosopher king* to the latest Marxist utopia are bound to fail since the complexity human condition does not have a solution. So democracy is truly the worst form of government except for all the others.

Perhaps Plato's advocacy of the philosopher king is a reaction to the way Greek democracy treated Socrates. But what exactly does one mean by a democracy? One cannot overlook the fact that the dictatorships of the proletariat called themselves socialist democracies. The

Ayn Rand supporters challenge every attempt to tax the rich and help the poor, some view that as a path to serfdom and there are those who seek to expand the list of fundamental rights to create an egalitarian society.

A democracy is a natural consequence of recognizing that "I am the sole conscious entity in my universe as you are in yours. I am merely an objective entity in your universe just as you are in mine". Thus, when it comes to societal decisions we have two and only two possibilities, namely "*might is right*" and "*peaceful resolution by mutual consent or democracy*". Obviously discussing the details will take the discussion too far off course but basically, anything is acceptable as long as everyone has an opportunity to advocate change. The terminology of fundamental rights is once again a commandment view. To give just one example, the European countries made "denial of holocaust" (The murder of several million Jews by Hitler's Germany) an offence. This, as any American would claim is an abridgment of the fundamental right of free speech, a commandment view. Accepting the ban while retaining a right to advocate abolishing it is a noncommandment view.

How to protect those advocating a change becomes an issue. In Islamic societies, blasphemy is punishable by death. Any advocacy to change the status is extremely unpopular. Any such proposal would be violently attacked and the governments do not intervene.

That is a better reason to term Islamic societies undemocratic than argue about voting and other externalities as evidence of democracy. In the aftermath of Salman Rushdie's publication of *Satanic Verses*, Muslims in UK suddenly realized that blasphemy against Christianity was technically a criminal offence in UK even though no one was actually punished under that law for over a hundred years. The Muslims wanted the law to be extended to include Islam but the society decided to remove the protection to Christianity too. It was an outcome that the Muslims did not want but is a great example of democracy in action. In science, when there is no fundamental theory, a trial and error approach is used. The limitations of the science, the tendency of individuals to cheat or opt out in hordes, the role of technology in this whole process was discussed earlier. All this suggest that democracy is simply a trial and error approach.

So a rule should not be obeyed either because it is divine or because it is scientifically valid human nature but because it is the current version of the law. Even the other organ of open democracies, an independent judiciary is only a trial and error methodology.

Obviously. Some of those opposing apartheid in South Africa a few decades ago followed the divine law of the Bible quite as much as those supporting the apartheid regime. The same institution, the supreme court of the United States said slave owners can pursue their slaves into the northern states and a hundred years later supported the civil rights legislation.

The key is to accept peaceful resolution as the cornerstone and a willingness to recognize and reconcile with failure of one's own cherished attempts to improve the situation without rancour, accusations of conspiracies and the like.

Reinterpreting Ancient Indian Ideas

The approach to religion as outlined here hopefully enables an individual to take such a balanced view. Once again there is no claim that this is a true interpretation of Hindu scripture, merely a description inspired by a personal Hindu way of life. It is perhaps possible to reach the same conclusions from any other religious or even atheist point of view and I personally hope that it is so. The three *runas* mentioned earlier are viewed here as the responsibilities or debts owed to maintaining succeeding generations of life with a subjective perception on earth. First is the necessity to assist in the creation of a next generation and nurturing them till they can take care of themselves. There is also the necessity to convey, consolidate and improve the collective human knowledge which is needed by succeeding generations. Finally there is the stewardship of the habitable world.

This can be accomplished in two different ways. One can for example take care of one's own children, natural or adopted. One can also manage an orphanage or become politically active and try to create a societal framework for

taking care of children. The same is true regarding teaching or environment. There can be direct individual contribution, impersonal management and political advocacy. Virtually all human beings aside from the socially dysfunctional can be said to discharge their runas.

Personal individual contribution has a far higher value than impersonal management or political advocacy which are purely intellectual. They do not contribute to an integral development of the subjective self which includes the physical, the emotional and the intellectual capabilities. That is absolutely essential for the peaceful resolution of conflicts through compromise and conciliation.

Religious mythologies sometimes point out that the householder who has to exercise virtues directly, may have more worth than an isolated monk eternally engaged in intellectual gymnastics. The loss of compromise that is visible in contemporary political sphere is possibly related to over reliance on intellect.

This is where the Indian concept of *yoga* is very illuminating. Many know only the physical exercises.

Some do point out that yoga is for controlling the mind and not merely the physical body. It is traditionally said to consist of eight components starting with yama and niyama and ending with the ultimate state of samadhi. There is reason to believe that yoga itself does not recognize a God and even a dream is considered to be an acceptable entity for concentration of the mind and self realization.

There again, how many are willing to recognize that the first four, *yama*, *niyama*, *asana* and *pranayama* deal with controlling the physical body with a moral code, postural exercises and controlled breathing? The fifth item, *pratyahara* is control of sense organs and mind while the next two, *dharana* and *dhyana* involve the intellect. Even more importantly, even from the earliest years, *bhakti yoga* (devotional practice) was given primacy. Some of the deities worshipped appear to be extremely controversial such as Krishna with his multitudes of consorts. But the sheer variety, ranging from an infant, a man-lion to the *ardhanareeswara* (half male half female) and devotional literature ranging from the ascetic to esoteric and sexual indicates only one thing. For an integral development of the body mind and intellect, subliming the sensual and emotional impulses onto God has been

recognized as not only necessary but absolutely essential.

Perhaps a dream is sufficient but it is best not to count in it. Nor on its nearest modern cousin, transcendental moral deism.

The reason why one accepts a stone idol as God is simple. The belief of the multitudes sustains one's own belief. Rituals are obviously similar. They integrate the body and the mind towards a common goal. Hindu dharma utilizing these complex and often mutually contradictory precepts had survived the historical onslaught of monotheistic religions in particular islam which no other tribal religion in any part of the world has managed.

Perhaps the same resilience would permit this latest version to provide a way of integrating science and religion. Or that seems to be the drift of this conversation. There is one issue though. Hindu scriptures have also defined dharma as "mahajana ena gata sa pantha" or the path followed by the righteous great person. So despite the argument throughout against relying on experts, we seem to have returned to following an expert.

There is a subtlety that is being overlooked. That definition does not specify who is *mahajana* or great. In the full quotation, both the scripture and the sage were held to be insufficient to define dharma. That is because the moment to decide does not come once to every man and nation but at each instance. So selecting a person as the guide depends on the individual. It will be a proper choice of example only when the body, mind and intellect of the seeker are integrated for choosing. So yoga is still a necessity for identifying dharma from one minute to another.

In any case dharma or faith in the Christian context is a path not for success in this world but for salvation. So all this discussion is perhaps a diversion?

Many supporters of the protestant work ethic seem to think that religion leads to success in both this world and the next. The current discussion however views the religious training as outlined here a help not for success but for conflict resolution. The terms *neeti*, *nyaya* and *dharma* were introduced earlier to explain this. *Dharma* is personal. Even in the most moralist of religions, Buddhism, *dharma* is ultimately to escape the cycle of birth and death. *Neeti* is a methodology for success without any emphasis

on moral inhibitions. Contrary to the meaning it acquired in modern Indian vernacular, the oldest *neeti shastra* in Sanskrit, the “panchatantra” talks about making and breaking friendships. The ancient *neeti sataka* of the Bhartrihari describes the characteristics of the wise, the ignorant, the brave and the cowardly. The similarity to contemporary seeking of scientific resolution of problems is not illusory. *Nyaya* as I see it is external to the self. It is the intellectual desire of the individual to grow beyond the individual, an expression of empathy with the fellow human beings and ultimately with the creation which can be objectively recognized. There is an emotional content to this empathy of a social animal. Since science (*neeti*) itself has limitations and is counterproductive when employed as commandments for universal benefit, the only hope is that this tradition and history of human culture can point some way of selecting *dharma* to resolve the conflicts.

The Irresolvable Duality

There are two reasons for the conclusions of the discussion being not very palatable to many. In the first place this idea of a law being obeyed without treating it as a universal commandment appears very strange, notwithstanding its validity in the scientific domain. Laws of science may be provisional and of variable certainty and utility. But that is not the concept of a law for a common man. Secondly the self-reliance advocated here both in the scientific and religious spheres would appear to be a scary prospect for many who would prefer to be guided by the community, congregation, expert or preceptor as the case maybe.

The desire for a preceptor, an expert or a leader to offload personal responsibilities is quite understandable. Quite often the religious congregation, ethnic community or in the contemporary world a group identity is a cloak for the same desire. It is very difficult to accept that the current failure or misery is purely due to incompetence or bad luck. Hence the acceptance of a leader, an expert or a preceptor, preferably one who can identify another group as the culprit.

The more serious problem is the basis on which a leader is chosen; character. Thanks to modern communication technology, intimate personal details of any leader is circulated as news.

A scientific expert or even a political leader seeks to make an objective change to one's existing situation. The contribution of a religious perceptor on the other hand is subjective. It stands to reason therefore that the religious guide is to be evaluated by what he is, even more than what he communicates. His personal actions should be considered from a moral perspective. An ancient religious leader is more useful in this context. His day to day life is not known in detail. At the same time, it is silly to evaluate the actions of an individual from an earlier era using the moral standards of today. In contrast to a preceptor, a scientific expert or even a political leader has to be evaluated by an objective examination of whether he has delivered. His personal morality is completely beside the point. Unfortunately modern societies take it in reverse, examining the morality of politicians as if they are saints to be canonized. Post independence, Indians in particular seem to be utterly unconcerned about practical morality of new age gurus. This is most regrettable but in line with their stupid choices in many areas.

Another sad fact about this fetish for a perfect leader as a solution is the unwillingness to see that they have one boundary which cannot be transgressed; they also have only twenty four hours per day. Short of miracles, no leader of religious leader can deal with all the issues at a micro level.

To blame the leader for an impractical idea is only appropriate but that is also a personal error of having chosen a wrong prophet. Blaming leaders is no different from finding groups responsible for your own misery. Ultimately, accepting a religious preceptor for subjective individual benefit may be foolhardy but unrestrained commitment to a political leader for objective societal benefits is catastrophic. That is the actual lesson of Stalin, Hitler and Mao.

Can one ever escape from this duality of subjective and objective assessments of reality? Ultimately this idea of obeying laws but not as inviolate commandments is a kind of duality. Altering the laws can also be because of subjective emotional reasons or objective intellectual argument.

A simple universal idea explains the whole of human condition. Everything a man does is a balance between being attracted by novelty and

satisfied with stability. As with everything else in being human, both the attraction and satisfaction, have a physiological basis. Some individuals would be extremely upset when prevented from experimenting with a novelty but many may not be. Some of those who experiment would become satisfied by being committed to the first novelty. Others may continue to experiment with other novelties.

This view is philosophically useful and may resolve societal problems in a pragmatic way. But it is hardly useful since it implies that a scientific study of human behaviour has no utilitarian value. That of course was the underlying theme of the entire discussion.

In the present context of winding up the discussion, it illustrates how fundamental duality is for understanding human behaviour.

Modern neurology defines it as the duality of the right and left brains. The left brain is analytical, the right brain is intuitive. The left is mechanistic and the right is artistic and so on. One feels humor provides a better description. "The fool doth think he is wise but the wise man knows himself to be a fool". One would prefer if conclusions of a long conversation weren't banal.

The issue is not and should not be reduced to a play of words. The challenge is to recognize that one can have rules and obey them while still being open for change. Behind the claim that no one will obey rules unless they are authoritatively enforced as divine law is typical religious disdain for the individual. For the same reason, the religious see no value for mythology unless it were admitted to be objective truth. Modern philosophers have fallen into a similar abyss by associating discipline and authority with force and constraint of the individual.

An Aesthetic Interlude

The silliness of this approach is beautifully illustrated by the travails of modern arts wherein it has been assumed that rules and discipline are antagonistic to creativity.

Pre modern art, be it painting, sculpture, music dance or literature was confined by elaborate constraints. There were motifs or subunits that had to be incorporated into the art for it to be appreciated by the aristocracy who could afford to support the artists and the lay public who followed the taste. These motifs enable an art critic to identify the schools of training and influence and to determine when the work was executed. The use of motifs created an artificiality and rigidity in art and thus inevitably constrained creativity.

But one has to admit that some individuals can still be extremely creative. The classical musicians in India are a really great example. They create spontaneously while being constrained by extremely elaborate rules.

That is also a great example of a different limitation. Only those with a lot of training can actually appreciate the music.

The motifs employed are constrained by both human physiology and technology. They are not merely capricious selection by ancestors and following them is not a form of ancestral worship

The musical scale is related to something innate in human beings as are things like the golden mean. A knowledge of perspective and geometric projections had to precede the emergence of naturalistic painting. And the development of photography has certainly reduced the need for portrait painting and led to the emergence of impressionist school of painting.

In some cases only a knowledgeable audience can really appreciate the creativity but let us return to modern art where rules and motifs are denounced and ignored. The audience is influenced by crowd mentality while the so called critics are verbose but unintelligible. The critics quite often are exposed for the frauds they are when they end up praising works of chimpanzees or even droppings from easels in superlative language.

Scientists like Sokal have tried to expose the hollowness of modern social sciences through elaborate hoaxes but what passes off as modern art and art criticism is more transparently idiotic.

All this for a simple reason of trying to use breaking of motifs, forms, rules as inevitably inimical to artistic expression.

Informality is another much praised modern virtue in interpersonal relationships as a reaction to formal etiquette. But it can as easily degenerate into laziness and carelessness as formality can lead to rigidity and unnaturality. Formality however has the advantage of inculcating discipline.

Ideas of living without rules as necessary for self expression are not really sensible. Discipline in all aspects of life, physical emotional and intellectual is necessary for excellence in any human activity and is certainly not necessarily antagonistic to creative excellence.

In that spirit the duality will endure in anything worthwhile that humans attempt, including understanding the universe and determining a path of action in harmony with that knowledge.

On a more pessimistic note, one can discern a duality in the utility of the present conversation itself.

The Poet's Lament

Once upon a time, the poet was lonely. He was sad no one could hear his song. Along came the engineer who promised, "I will enable you! Your voice will reach everyone in the world". The poet was thrilled. Naturally! Little did he realize that the engineer could make people hear, not listen! While earlier his voice was lost in silence it was now lost in the babble of voices as everyone used the same technology

This book presents in a conversational format, my personal philosophy that was earlier developed in a series of monographs about science, its strength, weakness and its relation to religion. It has been my consistent position that while a non expert cannot hope to completely understand science, let alone contribute to a new scientific discovery, use of simple common sense would enable one to understand the strength of the scientific result and its utility. Unfortunately, both science and religion are converted by the "experts" into commandments which ordinary people, incapable of understanding or evaluating by themselves must obey. My personal philosophy has been to reject this deification of expertise and to demonstrate that even a common individual can evaluate what is useful for himself. This conversation is an attempt to bring this philosophy, more fully developed in monographs to the common man.

About the Author : Dr. S T Lakshmikumar was awarded the Ph. D degree by the Indian Institute of Science in 1981 and worked as a scientist at the National Physical Laboratory, New Delhi from 1983 to 2015. His published monographs are The quest for new materials and Experimenting with the quantum world (Published by Vigyan Prasar), How well do we know it?, On walking the knife edge of science and religion, An unknown scientist in the ivory tower, India : My India and The lizard in the ear and forty modern variants (Published at Pothi).